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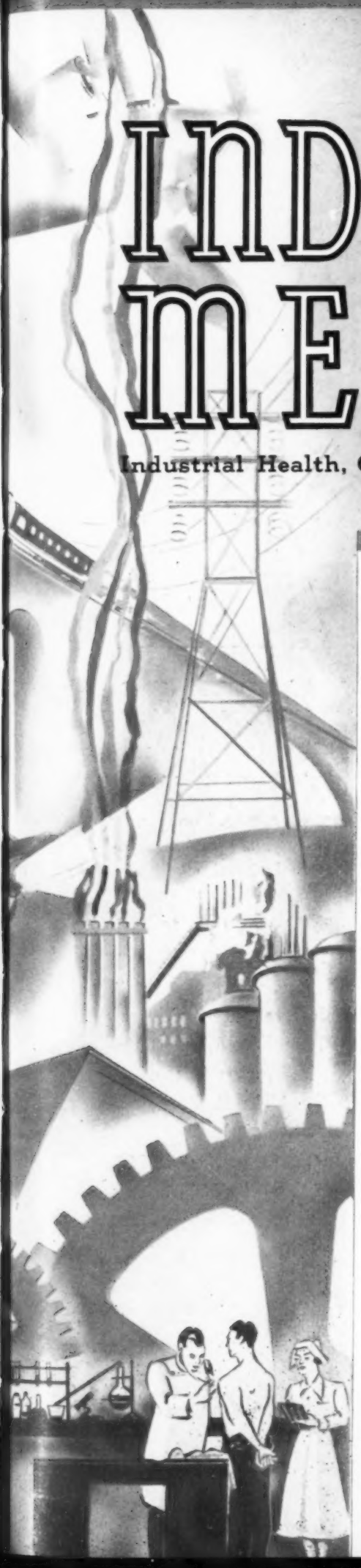

June, 1943

Industrial Health
— Its War and Postwar Significance —

Routine Serologic Testing
— of 15,000 Employees at Metropolitan Life's Home Office —

The Cardiac in Industry
— Criteria for Employment —

Industrial Epididymitis
— And Epididymo-Orchitis —

Tripoli and Silicosis
— Analysis of the Hazard —

Public Health and Industry
— The Methods of the One as Applied to the Other —

Industrial Medical Facilities
— County by County Survey in Pennsylvania —

Industrial Dermatitis
— 481 Cases —

The Formaldehyde Resins
— As Causes of Dermatitis —

The Nurse in Industry
— Functions and Responsibilities —

First Aid Corps
— Consolidated Vultee Aircraft, Nashville —

Physician and Surgeon
— Relationship to the Compensation Carrier —

Volume 12 Number 6

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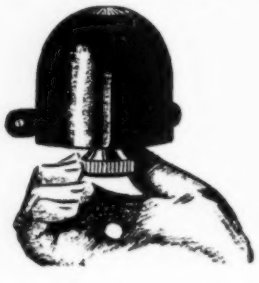

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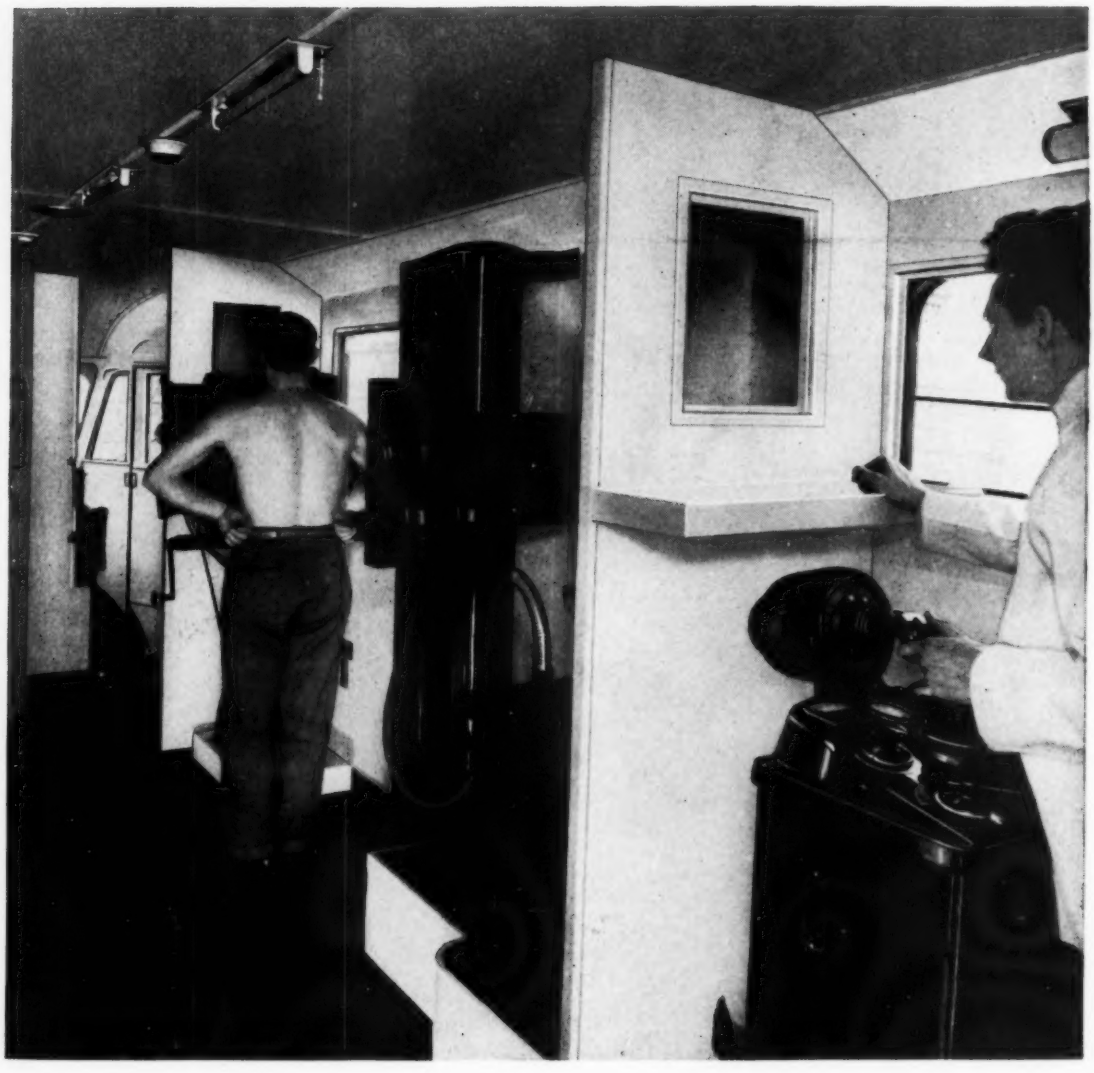

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IT IS a good thing once in a while to take a reckoning, analyze what's happening, and project the trends and tendencies of the present as nearly as may be into the future. DR. SAPPINGTON'S "Industrial Health" with relation to its war and post-war significance (page 361) does this most admirably. This being the publisher's column, and not the editor's, we can add that no one is better fitted than DR. SAPPINGTON to do an outstanding job in this respect—his background of extensive experience in all phases of industrial medicine and hygiene, his intimate contacts with the various forms in which the principles of these are expressed, and the able work he has done and is doing as consultant in their best manifestations endow his authorship with authority and put the stamp of importance on his work. . . . FOR MANY years Metropolitan Life Insurance Company's medical division has been distinguished for progressive leadership in industrial medicine. This has been so notable as to invest its reports with heavy significance. Valuable indeed is its latest one on "Routine Serologic Testing" (page 364) . . . DR. EARNHEART (page 367) summarizes the absenteeism problem in a manner that will commend itself to the industrial physician who is beginning to believe that, for various and sundry reasons not disclosed, this problem has lately been somewhat overplayed. . . . EASTMAN KODAK'S medical department also has a long-standing reputation for leadership in the careful development and constructive application of the principles of industrial medicine. DR. CRAIN'S "Placement of the Cardiac in Industry" (page 368) brings its work in that connection up to date, and offers its own experience as a guide for others. . . . DR. AMDUR'S "Industrial Epididymitis" (page 371) contains important suggestions for industrial physicians in connection with examinations. . . . DR. MCCORD and his co-workers, DR. MEEK and DR. HARROLD, in their "Tripoli and Silicosis" (page 373) contribute, as usual, an

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Elixir B-Plex

outstanding piece of work, and one which ought to go far toward disposition of a long-time controversy. . . . DR. MILLMAN, in "Public Health and Industry" (page 378), might seem to assume that industrial medicine is not yet as fully public health minded as it ought to be. Many industrial physicians have been so-minded for many years, but the injunction deserves repetition because there are still some who are not. . . . DR. SHILEN's report of a county by county survey of "Industrial Medical Facilities in Pennsylvania" (page 379) is headed for almost a textbook utility. As a measurement of the problem of introducing industrial medicine to the smaller industries it is a model in every respect of showing how the job should be done. The form used for the survey was given on page 343 of INDUSTRIAL MEDICINE for May. . . . DR. DAVIS interestingly describes his experience with "Industrial Dermatitis" (page 381) and concludes with pertinent and timely suggestions as to the placing of proper emphasis in connection with this too prevalent problem. . . . DR. MARKUSON and his associates discuss "The Formaldehyde Resins" as causes of dermatitis (page 383). . . . MISS JOHNSON very effectively brings up to date the developing ideas on functions and responsibilities of "The Nurse in Industry" (page 386). Her paper contains the subject matter of her presentation at one of the recent institutes on industrial health in Kansas City. It will be included in our forthcoming reprint of the "Industrial Nursing" supplement for May. Incidentally, this reprint will be available to all industrial nurses on request without charge. . . . DR. HARRISON describes Consolidated Vultee's "First Aid Corps," organized for the protection of personnel in the event of a bombing attack or sabotage. This was a pre-request development of the methods of preparation discussed in "Disaster Operations Plan" on page 416. Especially interesting is the description of the actual use of the first aid corps in several accidents arising out of routine work during the past year. . . DR. BEST'S "Follow-Up on Cholecystectomy" (page 393) was given at the last annual meeting held by the AMERICAN ASSOCIATION OF RAILWAY SURGEONS. . . . IN VIEW of the fact that a history of the development, organization and growth of the AMERICAN ASSOCIATION OF INDUSTRIAL PHYSICIANS AND SURGEONS is in the making, under the direction of DR. SHOUDY'S History Committee, the brief note on page 396 calling attention to the fact that the Association not only is taking a very active part in this war but also had an active part in the last world war, is timely. The dates of the "War Conference" at Rochester, May 24-27, were too close to the deadline of this issue for more than the statement on page 397 to the effect that the proceedings will be featured in July, with the remainder of the articles to follow in successive numbers. The note ends with the statement that "the

—*Continued on page 422.*

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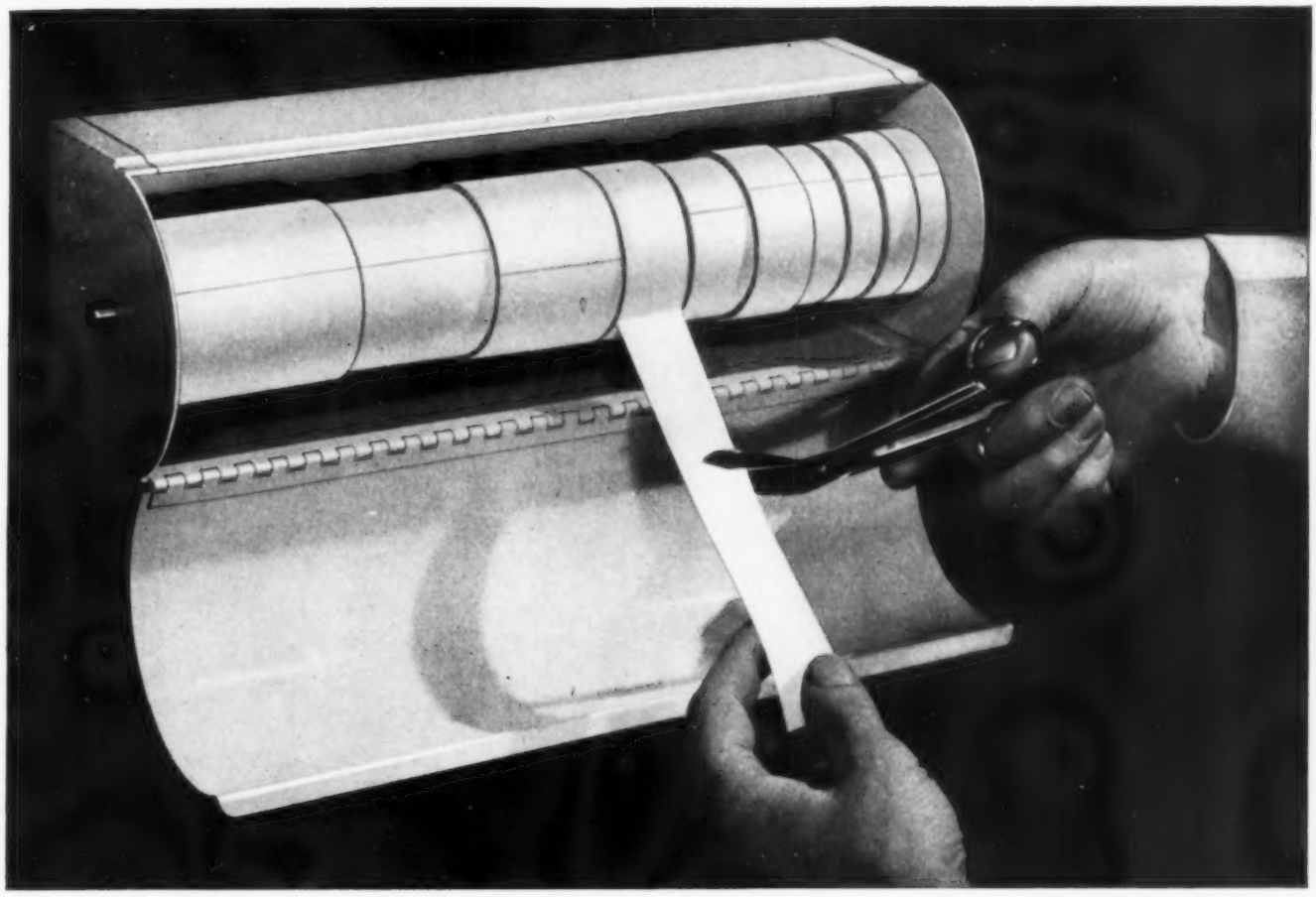

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AT THE request of DR. F. J. WAMPLER, of the Medical College of Virginia, DR. JOHN E. DUNN presented a series of five lectures on industrial dermatoses at the Institute on Industrial Medicine held during the week of March 22, under the auspices of the Committee on Industrial Health of the Medical Society of Virginia.

DR. GEORGE G. ORNSTEIN has been appointed professor of medicine and attending physician (Chest Diseases) at the New York Polyclinic Medical School and Hospital.

DR. ROBERT A. KEHOE, Research Professor of Physiology, College of Medicine, University of Cincinnati, has an article on "Pulmonary Irritants" in the *Bulletin* of the New York Academy of Medicine, May, 1943.

MAURICE L. TAINTER, M.D., professor of pharmacology, Stanford University, and also professor of pharmacology and head of the division of physiological sciences, College of Physicians and Surgeons, San Francisco, has been named research director of the Winthrop Chemical Company, Inc.

PUBLIC HEALTH Reports (58:15, April 9) has a report on the Toxicity of Lead Azide, by LAWRENCE T. FAIRHILL, WENDELL V. JENRETTE, STUART W. JONES and E. A. PRITCHARD U. S. Public Health Service.

DR. HERBERT H. BAUCKUS, of the Buffalo District Committee for Industrial Health, said, in a paper prepared for a symposium on industrial medicine at the New York State Medical Society's 137th annual meeting: "Since production, for war or for peace-time goods, is kept up in the interest of the nation as a whole, efficiency and output must be kept at a high level, and the health and welfare of the industrial worker and his family must be protected—yes, guaranteed—in the interest of the nation." He declared poor facilities for child care, improper living conditions and faulty transportation facilities also could impair the work-

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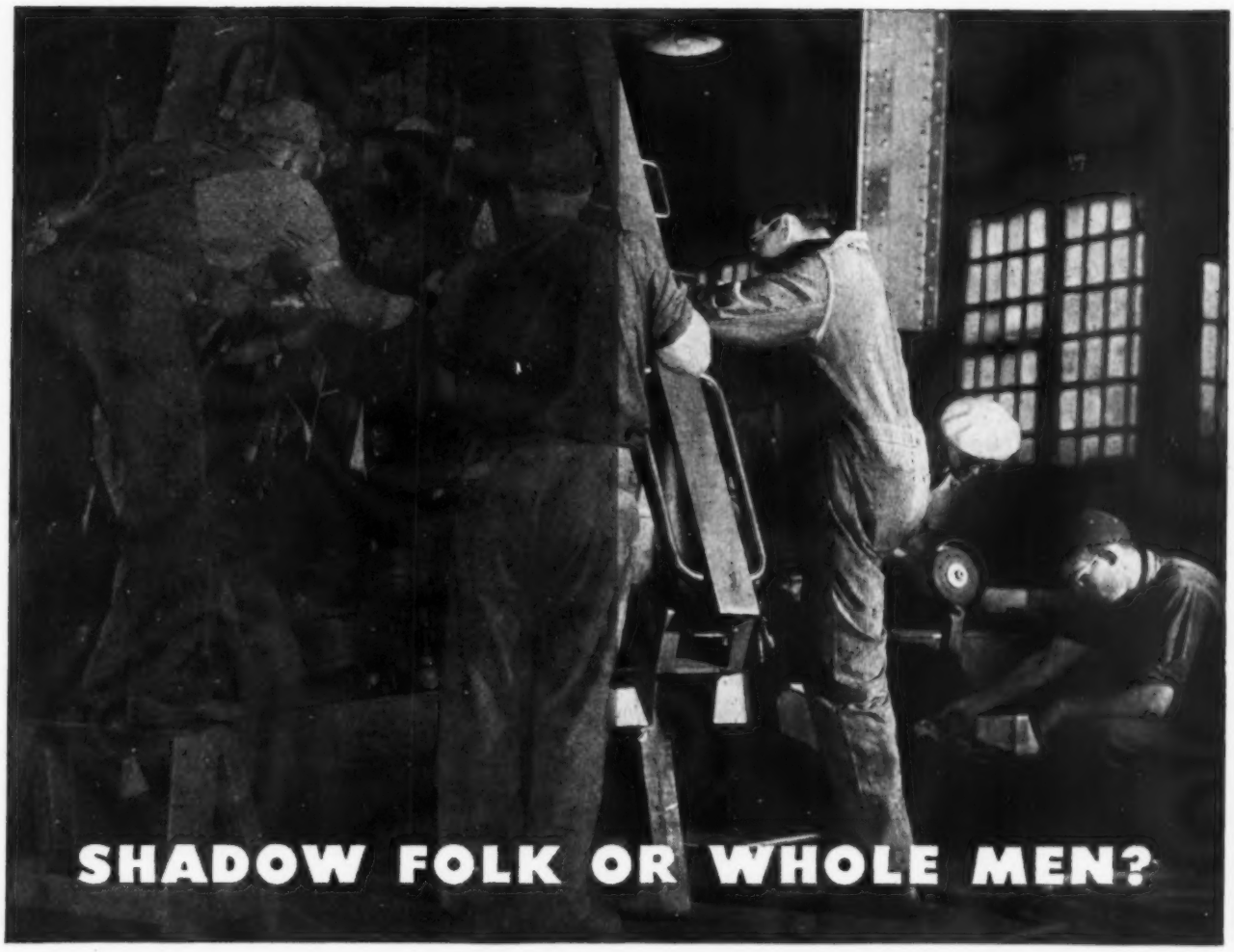

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er's efficiency. He suggested industrial and community medical services and social agencies pool resources to solve such problems.

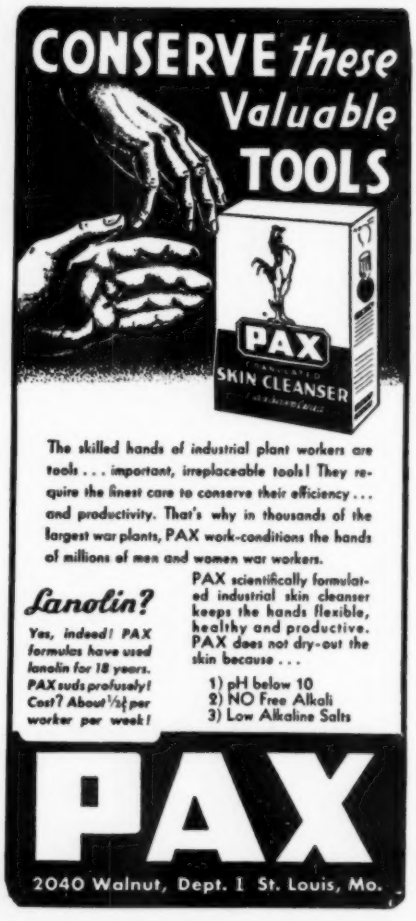
—*New York Sun*, May 4.

DR. LOUIS SCHWARTZ (*in Public Health Reports*, April 16) describes an outbreak of dermatitis in the pliofilm department of a factory making airplane engine covers. Fifteen cases had occurred among the 80 workers, all since the introduction of special pliofilm. R.M.F., a chemical added to the pliofilm to prevent deterioration was found to be the cause; it is both a primary irritant and a sensitizer. Protective measures were recommended.

DR. EDWARD S. MCSWEENY, medical director of the New York Telephone Company, told the 400 delegates to the thirty-second annual conference of the Indiana Tuberculosis Association, April 13, that industry was recognizing the tuberculosis problem as one that directly affected production. He stressed the value of pre-employment and periodic examinations and x-rays of employees and assistance in cures rather than exclusion of affected persons.

—*Indianapolis Times.*

INDUSTRIAL Nurses Club of Flint was addressed by DR. C. D. SELBY, medical consultant for General Motors, at its annual city-wide banquet at 6:30 P.M. Thursday, May 11, at Hotel Durant. "The Industrial Nurse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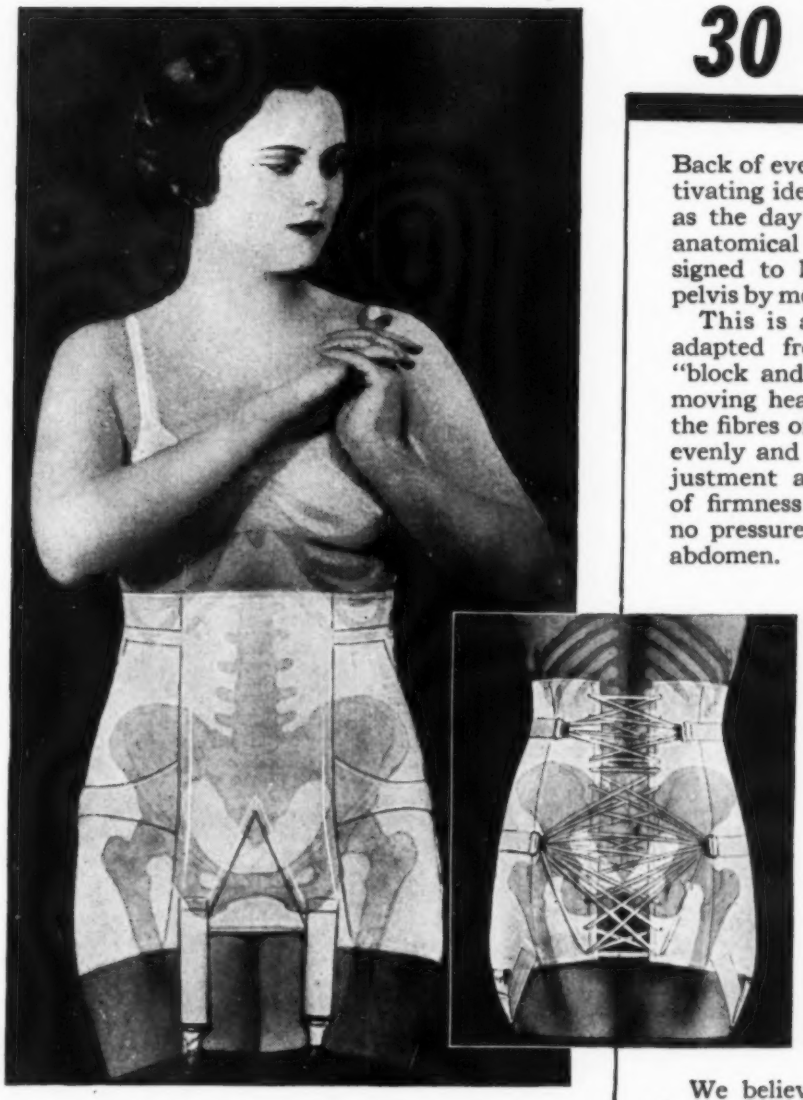

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DR. EDWARD A. DART, formerly Director of Industrial Hygiene in the Los Angeles Department of Health, has resigned to become physician-in-charge of the Chicago Dodge plant of the Chrysler Corporation. Assistant sanitary engineer, YALE ROSENFELD, U. S. Public Health Service (R), has been appointed acting director of the Division.

DR. A. H. WHITTAKER was a delegate from Detroit to the National Chamber of War Council, thirty-first annual meeting of the Chamber of Commerce of the U.S., in New York the last week of April.

DR. WARREN F. DRAPER, acting surgeon-general of the U. S. Public Health Service, told the Massachusetts Medical Society (meeting at Boston, May 25) that virtually all of the research of the National Institute of Health is now devoted to new problems arising from the global war, and he stressed the im-

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DR. WAYNE L. RITTER, associate director of the division of hygiene for the Mississippi State Board of Health, discussing progress

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TO provide an organization, not for pecuniary profit, in which all agencies and societies, both medical and lay, concerned with the problems of industrial health can hold membership and can meet together in conference for the study, discussion and careful consideration of all industrial health problems and procedure; to engage in scientific research to determine the cause, nature, prevention and cure of diseases and injuries of occupations; to assist in establishing and supervising industrial health clinics to serve small industries; to establish and maintain hospitals which will furnish facilities for the care, treatment and study of occupational injuries and diseases; to make surveys of industrial medical services and recommendations for their improvement; to solicit, receive and administer funds for any purpose that will advance and/or improve industrial health; to establish undergraduate and/or post-graduate courses in industrial medicine and surgery and/or to cooperate with medical schools and industriess in maintaining such courses; and to use all those means, which from time to time, may seem wise, for the advancement of industrial health.

EVEN A MINOR CASE OF LOST-TIME EYES costs far more than any pair of AO Safety Goggles

When one of your workmen suffers a minor eye injury, here's a typical picture of what happens: He stops work and goes to the First-Aid station for treatment. Usually he is sent home to nurse his injury. Next day he returns to work and has two brief treatments at the First-Aid room.

Now, let's estimate costs. First, the workman suffers pain and annoyance. He loses 3 or 4 hours' pay. Your company's expenses include items such as these:

Machine idle for 3 or 4 hours . . . First Aid . . . Treatment Medical Supplies . . . Foreman's time on case . . .

Now, compare these costs with the price of a pair of comfortable AO safety goggles. You'll find that even a *minor* eye accident is now costing you two, three, five, maybe *ten* times as much as a pair of AO Safety Goggles designed to prevent eye accidents from happening.

Make sure that your workers have AO eye protection. For information, advice and full cooperation, get in touch with the nearest AO branch—there's one in every principal industrial center throughout the United States and Canada —or have an AO representative call at your office.

American Optical COMPANY

SOUTHBRIDGE, MASSACHUSETTS

REDUCE POST-ACCIDENT "SLOW-UPS" WITH NEW-SKIN

Accidents will occur . . . but when minor cuts, abrasions, burns are treated with NEW-SKIN, post-accident "slow-ups" . . . due to impaired flexation and dexterity . . . are reduced to a minimum.

NEW-SKIN, when applied topically, diffuses evenly, smoothly . . . forms a tenacious, protective covering . . . is highly flexible, water-proof and relatively non-irritating . . . withstands repeated washings with soap and water.

The superiority and utility of this aseptic covering, as a protection against contamination, recommends its use in industrial first aid.

FORMULA: Pyroxylin Solution, Oil of Cloves, 8-hydroxyquinoline (1%), Alcohol 8.7%.

ALSO RECOMMENDED in the treatment of poison ivy, dermatitis . . . as a protection against cast irritation . . . friction, blisters . . . post-operative area infection.

NEWSKIN COMPANY, 882 THIRD AVENUE, BROOKLYN, N. Y.

of the state's industrial health program, said that the more progressive companies are seeing the wisdom of carrying on a detailed safety, health, and welfare program including the employment of physicians, engineers, nurses and dietitians. Other innovations he listed include nutritious meal service; physical examinations; day care centers for children of working mothers; guards for potentially dangerous machines; and protective devices where chemicals or injurious gases are used in manufacturing processes.

—*Jackson, Miss., News*, May 24.

Industrial Health Officers

THE surgeon-general's office has sent out requisitions for men between 35 and 45 years of age who can meet the following qualifications for hygiene officers: (1) Applicants must have completed a four-year course and received a bachelor's degree, preferably in chemical or mechanical engineering or chemistry. A master's degree in any of these three fields may be substituted for one and one-half years of experience outlined below, provided the work for the master's degree included an appropriate industrial hygiene major. (2) The candidate must present at least four years of actual experience in industrial hygiene, including one or more of the following: (a) study of the integrated industrial environment from the point of view of recognizing and appraising health hazards; (b) selection, calibration, and maintenance of special apparatus used in industrial health studies; (c) sampling and analyses of dusts, mists, vapors, gases, and other materials for the evaluation and control of industrial health hazards; (d) determination of general and local ventilation adequacy and requirements; (e) selection, procurement, and maintenance of personal protective devices such as respirators, masks, goggles, and clothing; (f) preparation of reports on the engineering aspects of industrial hygiene surveys, including recommendations for correction of health hazards. This experience may have been acquired while in the employ of one or more of the following: (1) Federal, state, county, or city governmental service. (2) An approved college or university. (3) A firm having an effective industrial hygiene program; an organization or individual performing industrial hygiene, or a manufacturing or engineering firm specializing in the design, manufacture, or installation of equipment or supplies for control of industrial health hazards. Limited service men acceptable. Apply Procurement District office.

—*Chicago Tribune*, May 5.

DR. C. A. WALKER, of San Francisco, Chief Surgeon of the Southern Pacific, was elected president of the WESTERN ASSOCIATION OF INDUSTRIAL PHYSICIANS AND SURGEONS at its third anual convention at the Biltmore Hotel, April 29. DR. WALKER succeeds DR. BENJAMIN J. FREES, of Los Angeles, who was elected to the board of directors. DR. RUTHERFORD T. JOHNSTONE, of Los Angeles, was reelected secretary, and DR. J. M. MC CULLOUGH, of Crockett, was reelected treasurer. DR. RICHARD SCOFIELD was elected to the board of directors to which DRS. ROBERT T. LEGGE, of the Berkeley campus of the University of California, and JOHN D. BALL, of Santa Ana, were reelected.

—*San Francisco Examiner*, April 30.

LETTERS

DR. ROY D. MCCLURE, surgeon-in-chief, Henry Ford Hospital, Detroit, whose "Study on Minor Burns" was a program feature at the Postgraduate Industrial Medical and Surgical Conference in Detroit, April 8, writes concerning the abstract of his presentation on page 326 of INDUSTRIAL MEDICINE for May, 1943, as follows: "The sentence, 'The statement has been made that 90 million man-hours were lost during the past year because of burns,' should read, 'because of industrial accidents.' My manuscript said 'accidents,' but my mind was so much on burns that I read it 'burns.' By the way, this statement was made by William L. Green in a radio broadcast on Friday, April 2. The sentence, 'It was possible through the cooperation of DRS. SELBY and PRENDERGAST to make an analysis . . . ,' should have included the name of DR. HARLEY L. KRIEGER, of the Ford Motor Company."

TESTED BY FLAME . . . PROVED BY RESULTS

ALL theoretical considerations aside, proof of the safety and efficacy of a burn preparation rests solely upon its action when used on burns and scalds.

CALOE OINTMENT (Cole) has a remarkably consistent record of successful trial by fire. Extensive laboratory and clinical tests have established its outstanding safety and value for the local treatment of burns and scalds and as a vulnerary to aid healing of wounds.

Consisting of 15% aloes (U.S.P.) and 5% chlorbutanol (U.S.P.) in a special petrolatum and calamine base, CALOE OINTMENT (Cole) is easily applied on bandages that may be readily and painlessly removed after the requisite periods of treatment.

Definitely analgesic, with rapid pain relieving action, CALOE OINTMENT is effectively astringent and styptic. Purulent surfaces soon become clean. Healing is hastened and the burned areas remain smooth and pliable. Men return to work sooner, their efficiency and skill not impaired by dense scar formations.

CALOE OINTMENT (Cole) is supplied in 1 ounce and 1 pound containers. For liberal trial quantity and pertinent literature, just fill in and mail the coupon below.

CUT "*Hangover*" ABSENTEEISM

A man suffering from "hangover" is of little value on the production line. However, there is no need to send him home when his symptoms can be so readily relieved by Cole's BRAL. A balanced formula of three bromides, acetylsalicylic acid and caffeine alkaloid, BRAL quickly relieves headache and general malaise, quiets jittery nerves and helps restore efficiency.

Try BRAL and keep the men on the production line.

CALOE OINTMENT (Cole)
for
BURNS and SCALDS

COLE CHEMICAL CO.
St. Louis, Mo.

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Cole Chemical Company
3721-27 Laclede Avenue
St. Louis, Mo.

Gentlemen: Please send me pertinent literature and samples of BRAL and of CALOE OINTMENT.

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_____ City _____ State

NOW **PROTECTION** *for the* **HANDS** *of industry*

That Offers A DOUBLE Safeguard Against Occupational Dermatitis

Extensive studies reveal that soaps and improper use of cleansing agents are as equally responsible for dermatitis as industrial irritants. You will find LOWILA PASTE a simple, as well as practical aid in the control of this saboteur of manhours.

1. LOWILA PASTE not only forms a tough, non-greasy, *antiseptic* film between the skin and irritating substances, but
2. This film is itself a non-irritating detergent, only slightly de-fatting, which upon simple rinsing carries away dirt and grime with it.
3. In fact, LOWILA PASTE is recommended by dermatologists in the treatment and prevention of dermatitis due to, or aggravated by use of soap.
4. So mild it may be used on the face, too, to protect against air-borne irritations.

Let us send you a liberal supply of Lowila Paste for trial. Write Westwood Pharmacal Corp., 1020 Main Street, Buffalo, N. Y.

LOWILA PASTE Westwood PHARMACAL CORP. Buffalo, New York

DR. RAYMOND CHARLES ALMY, long identified with the NEW YORK STATE SOCIETY OF INDUSTRIAL MEDICINE, many years a director, for the past several years its treasurer, and lately a vice-president was taken by death several months ago. DR. ALMY was born in Dundee, New York, May 24, 1882; graduated at Syracuse University College of Medicine in 1908; interned at Auburn (New York) City Hospital; and began general practice at Auburn in 1908. Although his Association activities were mostly local, he was one of the pioneers in industrial medicine and traumatic surgery, having begun their practice in 1917 when he became medical director for the Columbian Rope Corporation at Auburn. He continued in this capacity until his death. He was well-known and well-liked. From his associates comes the tribute, "he was one grand man, and we miss him very much."

DR. PHILIP H. KREUSCHER, 59, who retired several months ago as chief surgeon of the Chicago district of the Carnegie-Illinois Steel Corporation, after seven years in that position, died June 1 at Chicago. DR. KREUSCHER was born at DeWitt, Nebraska, November 18, 1883. He graduated in 1908 from Northwestern University Medical School, where he later became assistant professor of surgery. He was also clinical professor of orthopedic surgery at Loyola University. From 1932 to 1936 he was medical director for the Illinois Industrial Commission. As a Fellow of the American College of Surgeons he was a member of its Committees on Fractures and on Industrial Medicine and Traumatic Surgery; also a member of the editorial board of *Surgery, Gynecology & Obstetrics*. He was at one time president of the Illinois State Medical Society. Author of more than 100 articles on bone and joint surgery, he was distinguished for his interest and accomplishments in the field of traumatic surgery. For many years he had been surgeon of the White Sox baseball club, in which capacity he gained a considerable reputation in the sports world as well as among medical men for his operations on the throwing arms of ailing ball players. "One of his patients was Fred (Dixie) Walker, a former White Sox player and now a Brooklyn outfielder. DR. KREUSCHER in 1937 performed on Walker what was called 'one of the greatest pieces of baseball surgery.' Walker had lost his throwing power after tearing a ligament in his right shoulder in a slide." Although he retired from the Carnegie-Illinois Steel Corporation on account of failing health, DR. KREUSCHER nevertheless was greatly interested in the education of general practitioners on the subject of industrial medicine. At the time of his death he was a member of the Illinois Medical Society's Committee on Industrial Health, where his knowledge of industrial medical problems and his marked administrative ability were a pronounced and valuable educational force.

GENERAL

GRUMMAN Aircraft and Engineering Company plant on Long Island has instituted cafeteria service in every unit of the plant; beauty parlors for women; and trained nurses to look after illnesses in the plant, and if necessary, in the homes. The company provides shopping services, nursery schools in nearby towns, and recreation rooms in the plant with radios and games.

ISOLATION and crystallization of the antianemic Bc vitamin — half a million times more potent than fresh liver—which may speed convalescence from many illnesses because of its blood regenerating effects, has been announced by scientists of Parke, Davis & Company. The announcement, contained in the April 30 issue of *Science*, describes the new vitamin Bc as definitely a member of the vitamin B complex. The subletter "c" has been added to the name to represent the thousands of chicks on which studies were made.

A PLAN for industrial dental service, designed to reduce absenteeism and improve workers' health and productive efficiency, has been adopted by the Second District Dental Society of the State of New York.

—*J.A.D.A.*, May 15, 1943.

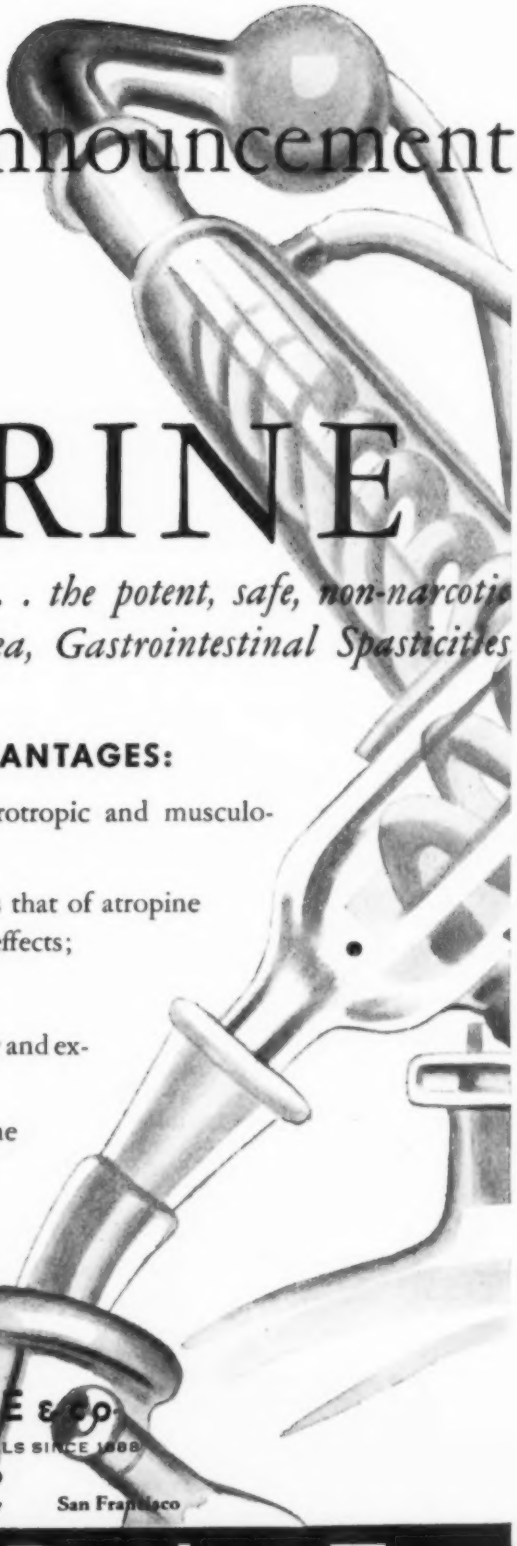
important announcement

Searle Research

presents

PAVATRINE

. . . . . the potent, safe, non-narcotic antispasmodic for Dysmenorrhea, Gastrointestinal Spasticities



OFFERS THESE CLINICAL ADVANTAGES:

1. Dual antispasmodic action—both neurotropic and musculotropic effects;
2. High spasmolytic potency—many times that of atropine by animal tests without untoward side effects;
3. Ability to abolish uterine contractions;
4. Increased safety—demonstrated clinically and experimentally.

Literature showing relaxing action of Pavatrine on spasm, together with dosage and administration, available on request.

Pavatrine is supplied in bottles of 20, 100 and 1000 sugar coated tablets of 2 grs. each.

G. D. SEARLE & CO.

ETHICAL PHARMACEUTICALS SINCE 1888

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RESEARCH IN THE SERVICE OF MEDICINE

Speed Healing with DOMEBORO TABS

New, faster wet-dressing therapy

When you want results—fast—in contact dermatitis, infections, bruises, abrasions, and other traumatic injuries where wet dressings are indicated, use Domeboro Tabs!

Domeboro Tabs act faster and better than Burow's and boric acid because (a) Domeboro Tabs are *lead-free*. They contain no lead to inhibit the local repair and growth of the skin by interfering with mitosis. (b) Domeboro Tabs provide an inert precipitate which helps keep compresses wet longer. (c) Domeboro Tabs make it easy for patients to carry on home treatment as instructed.

In key industrial and military medical establishments, Domeboro Tabs are preferred for wet dressings. They are recommended by the National Research Council and included in the military *Manual of Dermatology*.

Your job is to get men and women back at the job faster. Up-to-date wet-dressing therapy can help. Always remember to use and recommend Domeboro Tabs!

For trial samples and literature, write

DOME CHEMICALS Inc., 250 East 43rd Street, New York, N. Y.

PHYSICIANS and nurses in industry who are concerned with the protection of the worker's skin may be interested in several formulae for the prevention of industrial dematitis. Under the title, "Skin Protective Cream for Industrial Workers," these are given in the trade paper bulletin of the Glycerine Producers' Association, available upon request to GEORGIA LEFFINGWELL, Editor, Suite 2050, 11 West 42nd Street, New York City.

CONTRACT surgeons, male and female, are being sought for army-operated depots and industrial plants in South Dakota, Nebraska, Kansas, Missouri, and Colorado. The pay is about $3,400 a year for those with dependents. Inquiries may be addressed to the Surgeon, Seventh Service Command Headquarters, Federal Building, Omaha, Nebraska.

—*Medical Economics*, May, 1943.

ACCIDENTS on the jobs are the most publicized causes for absenteeism, yet they are relatively unimportant. Even when industrial accidents are investigated as to cause, it is shown that the majority of them are due to man failure and not machine failure."

—JOHN S. NAGEL, Industrial Welfare Counsel, Zurich Insurance Cos.

OUR EXPERIENCE with Women Finishers, by K. M. SHAAF, in *Metal Finishing*, September, 1942: "A general article dealing with women in spray painting and dipping. One gathers that special attention was given to the special needs of women workers and the results were quite satisfactory. The foreman finds that work has not suffered in quality or quantity, absenteeism and lateness are no worse than before, and that women are patient and loyal."

—Comment in *The Australian Management Review*, December, 1942.

INJURY to women's feet is a problem that needs our prompt attention. Four women received fractured toes during the month of March. All of these injuries could have been prevented had the ladies been wearing safety shoes.

—Westinghouse Medical Department's *Safety News*, May.

ALTHOUGH the tremendous expansion in wartime construction greatly increased the number of workers employed by Stone & Webster, the company, nevertheless reduced the frequency of its lost time accidents 25% and the severity of such accidents by 51%. This splendid safety record was an important factor in the speedy construction of vital plants for the production of war materials and equipment.

—*Liberty Magazine*, press release.

DESPITE the sudden and enormous task of conversion to war work in 1942, and in the face of a 25% increase in employees and a 32% increase in hours worked, Westinghouse was able to reduce its already good accident frequency rate by 5.5% and its accident severity rate by 3.5%. DR. T. LYLE HAZLETT, Medical Director, supervises the company's safety precautions.

—*Liberty Magazine* release.

AT THE fourth International Assembly of the International Surgeons, to be held at the Waldorf Astoria Hotel, New York City, June 14, 15, 16, dealing with the subjects of "Rehabilitation" and "War Surgery," papers will be read by eminent authorities in the Grand Ballroom during both morning and afternoon sessions; and continuous round-table discussions on Rehabilitation, War Surgery, Care of Veterans and Allied Subjects have been scheduled to run for the duration of the Assembly.

THERE were not more than 10,000 industrial safety engineers in the entire country when we first began to arm against the Axis. By July, 1944, war plants will need some 55,000 key supervisors qualified to carry responsibility for the safety and health of workers. About 38,000 persons in strategic positions to wage war against industrial accidents have already received the needed training through the War Safety Training program of the U. S. Department of Labor.

—OWI release.

NORWICH Pharmacal Company has set up a weekly prize of $100 to be known as the "War Effort Jack Pot." The plan provides that the clock numbers of eligible employees be placed in a container from which a number is drawn once each week. If the person whose clock number corresponds with this drawn number has not been absent or tardy during the preceding week, he receives the $100 cash prize. If, because of absence from work or tardiness he is not eligible for the prize no prize will be awarded that week but the following week the amount to be awarded will become $200 and will increase each week thereafter by the amount of $100 until a person

"Habit is a sort of Second Nature"

CICERO: De finibus, V. c. 50 B.C.

...and Petrogalar makes it easy to establish "habit-time" for bowel movement

One of the many reasons physicians like Petrogalar is that it helps to make "Habit Time" second nature with patients.

An *aqueous* suspension of mineral oil, Petrogalar brings effective, yet gentle relief. How? By adding unabsorbable fluid in the colon, Petrogalar brings about comfortable elimination with no straining . . . no discomfort. Furthermore, Petrogalar supplies moisture . . . retains moisture . . . counteracts excessive dehydration.

Miscibility and even dissemination are assured by the fine division of suspended oil globules.

Petrogalar is also pleasant to take. It may be thinned with water, milk or fruit juices.

Five types offer a choice in treating a wide range of conditions.

Try Petrogalar on your next group of patients.

*Reg. U. S. Pat. Off. Petrogalar is an aqueous suspension of pure mineral oil. Each 100 cc. of which contains 65 cc. pure mineral oil suspended in a flavored aqueous gel.

Supplied in 5 Types

Petrogalar Laboratories, Inc.
Chicago, Illinois

Petrogalar*
Promotes "Habit-Time" of Bowel Movement

Rx DESITIN OINTMENT

The External Cod-Liver Oil Therapy

USED EFFECTIVELY IN THE TREATMENT OF

Wounds, Burns, Ulcers, especially of the Leg, Intertrigo, Eczema, Tropical Ulcer, also in the Care of Infants

Desitin Ointment contains Cod-Liver Oil, Zinc Oxide, Petrolatum, Lanum and Talcum. The Cod-Liver Oil, subjected to a special treatment which produces *stabilization* of the Vitamins A and D and of the unsaturated fatty acids, forms the active constituent of the Desitin Preparations. The first among cod-liver oil products to possess unlimited keeping qualities, Desitin, in its various combinations, has rapidly gained prominence in all parts of the globe.

Desitin Ointment is absolutely non-irritant; it acts as an antiphlogistic, allays pain and itching; it stimulates granulation, favors epithelialisation and smooth cicatrisation. Under a Desitin dressing, necrotic tissue is quickly cast off; the dressing does not adhere to the wound and may therefore be changed without causing pain and without interfering with granulations already formed; it is not liquefied by the heat of the body nor in any way decomposed by wound secretions, urine, exudation or excrements.

DESITIN POWDER

Indications: Minor Burns, Exanthema, Dermatitis, Care of Infants, Care of the Feet, Massage and Sport purposes.

Desitin Powder is saturated with cod-liver oil and does not therefore deprive the skin of its natural fat as dusting powders commonly do. Desitin Powder contains Cod-Liver Oil, (with the maximum amounts of Vitamins and unsaturated fatty acids) Zinc Oxide and Talcum.

Professional literature and samples for Physicians' trial will be gladly sent upon request.

Sole Manufacturer and Distributor in U. S. A.

DESITIN CHEMICAL COMPANY

70 SHIP STREET PROVIDENCE, RHODE ISLAND

who is eligible wins the combined jack pot. The plan, which went into effect Monday, April 19, has been received with great enthusiasm.

A GUIDEBOOK defining absenteeism, describing causes and suggesting remedies has been issued to Labor-Management War Production Drive Committees in more than 2,000 war plants by War Production Drive Headquarters of War Production Board in Washington. The publication will be available to other war plants on request.

LABOR and management at Penn Steel Castings Co., Chester, Pennsylvania, realizing the importance of preventing accidents in time of war, inaugurated an "Around the Clock Safety" campaign last year which enabled them to reduce the frequency of their lost-time accidents by 27% and the severity by 79%, in spite of an 80% increase in exposure.

—*Liberty Magazine* release.

ACCORDING to Senator James Mead, who has made a detailed study of absenteeism in war plants, not one report out of hundreds "from shipyards, aircraft plants, steel fabricators, and practically every important industrial classification" coming in to the Truman Committee made any mention of "Monday-morning hangovers." What these reports from plant managers did mention as one of the biggest factors in absenteeism was accidental and occupational disabilities due to industrial accidents.

—*Daily Worker, N. Y. C.*, May 4, 1943.

ADEQUATE food for workers is one of the important factors in reducing absenteeism, fatigue, labor-turnover and slow-downs in production, say nutrition experts in this country and in Britain. So important is this factor that factory inspectors of the British Ministry of Labor have been given the power to require any factory employing 250 or more workers to have a canteen. More than 96% of the British factories employing more than 250 and 7,500 small factories now have canteen service. There are still some 22,000 war plants in this country that do not have in-plant food service, it is estimated by the Nutrition in Industry Division of the Food Distribution Administration.

—*Victory Bulletin.*

THE question of the medical department's relation to other departments in the plant was found to resolve itself most often into this query: "To whom should the medical department report?" Here the recommendation of the Advisory Group was that "The medical department, regardless of size, should be responsible to an executive of the organization."

—From "Nurses in Industry State Their Aims," by POLLY ACTON, R. N., Medical Department, *New York Times*, in *Trained Nurses & Hospital Review*, April.

INDUSTRIAL Hygiene Service of the Tennessee Department of Public Health has initiated the publication of a quarterly bulletin called "Tennessee Industrial Hygiene News." The first issue, in March, has a foreword on the general problem, and a statement of services of the Tennessee Department of Public Health available to industry, prepared by DR. W. C. WILLIAMS, State Health Commissioner. This issue features Industrial Hygiene Nursing. "Succeeding issues will contain a feature article on a particular phase of industrial hygiene together with comment of a general nature."

—*Industrial Hygiene.*

WE MUST beware of trying to build a society in which nobody counts for anything except the politicians and the officials, a society where enterprise gains no reward and thrift no privilege . . . Of all the races in the world our people would be the last to consent to be governed by a bureaucracy. Freedom is in their blood."

—WINSTON CHURCHILL, quoted by F. C. CRAWFORD, President, National Association of Manufacturers.

THE army procurement office is taking applications of industrial hygiene engineers who wish to assist the army surgeon-general. Those who qualify will receive commissions. The men are needed to assist in the evaluation of industrial health hazards; to inspect arsenals, depots and plants and to investigate conditions, determine changes, report findings and follow through on newly adopted policies and recommendations.

—*Indianapolis Times*, May 7.

THE countywide tuberculosis survey in Cabarrus, originally scheduled for May or June, has been postponed indefinitely due to action of the U. S. Public Health Service in calling in all its x-ray equipment for use in government-owned plants. The equipment that would have been used here was the property of the government. DR. M. B. BETHEL, head of the Cabarrus county health department, states that the survey in

NOTHING IS TOO GOOD FOR THESE MEN . . .

Seriously . . . any dietary extreme would be justified if it were necessary to ensure an optimal supply of essential vitamins for industry's workers.

For men doing hard physical work, an adequate daily intake of the vitamin B Complex is imperative if physical fitness is to be maintained.†

When vitamin B Complex is indicated as an addition to a ration, a natural product such as yeast would seem to be a source of all the necessary components.†

Specially prepared from selected brewers' yeast, Wyeth's Elixir B-Plex* is a palatable and potency-protected preparation of the richest natural source of the whole vitamin B complex. Each teaspoonful contains the water-soluble active constituents of 60 grains of high-grade brewers' yeast.

†JOHNSON, R. E.; DARLING, R. C.; FORBES, W. H.; BROUHA, L.; EGAÑA, E., and GRAYBIEL, A. (The Fatigue Laboratory, Harvard University and The Thorndike Memorial Laboratory, Boston City Hospital, Boston, Massachusetts): The Effects of a Diet Deficient in Part of the Vitamin B Complex Upon Men Doing Manual Labor, J. Nutrition 24: 585-596 (Dec. 10) 1942.

THE NATURAL VITAMIN B COMPLEX

*Wyeth's**

ELIXIR B-PLEX

*Reg. U. S. Pat. Off. Supplied in 8 fluidounce bottles

JOHN WYETH & BROTHER, INC. PHILADELPHIA

THIAZOINT
10% SULFATHIAZOLE OINTMENT (HART)
A valuable aid in controlling pyogenic infection in wounds and minor surgery. Useful as an adjunct to the usual surgical procedures in: Contaminated and Acutely Infected Superficial Wounds and Burns; Boils and Carbuncles; Varicose, Diabetic and Decubitus Ulcers.
Supplied in 1-oz., 1-lb. and 5-lb jars.

THIAZINC
SULFATHIAZOLE-CALAMINE CREAM (HART)
A greaseless cream which dries rapidly and forms an adherent, slightly astringent film. For the treatment of Impetigo and Other Superficial Skin Infections of Coccal Origin.
Supplied in 1-oz., and 1-lb. jars.

OTOZOLE
SULFATHIAZOLE-SALIGENIN EAR DROPS (HART)
Bacteriostatic, Analgesic and Dehydrating. Useful in the treatment of Acute Otitis Media, Otitis Externa, Chronic Middle Ear Suppurations and similar conditions.
Supplied in ½-oz. bottles with droppers

EFEDRON
HART NASAL JELLY
The original water soluble Ephedrine Nasal Jelly. Relieves nasal congestion promptly and peasantly. Particularly convenient for ambulant patients.
Supplied in nasal tipped tubes.

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The Quick, Pleasant, Stainless, New Benzyl Benzoate Treatment for Scabies.
Supplied in 4-oz., pint & gallon bottles.

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MORRHU-COMP
COD LIVER OIL OINTMENT (HART)
Stimulates epithelization and promotes healing with minimum scar formation. Valuable in the treatment of Burns, Wounds, Abrasions and Varicose Diabetic and Decubitus Ulcers. An excellent means of applying U.S.P. Cod Liver Oil without its unpleasant features.
Supplied in 1-oz. tubes and 1-lb and 5-lb. jars.

Send for Literature and Complimentary Samples
HART DRUG CORPORATION
MIAMI, FLORIDA

this county will eventually be made when the North Carolina health service can deliver and put into service the proper equipment. Under the plan, doctors and nurses of the state industrial hygiene staff conduct examinations of industrial workers, and these examinations are given without charge to the workers.

—*Charlotte, N. C., Observer*, May 21.

U. S. PUBLIC HEALTH SERVICE announces that the title "Sanitarian" has been adopted for commissioned reserve officers whose education and experience are in fields allied to public health work, but not in the specific field of medicine, dentistry, sanitary engineering, or engineering. Comparable qualifications with regard to education and experience for each rank are demanded for all titles. This title will replace the titles of Chemist and Industrial Hygiene Engineer which have been given recently to some officers assigned to industrial hygiene work.

—*American Journal of Public Health*, May, 1943.

INDUSTRIAL hygiene has probably made more progress than any other branch of environmental sanitation in its attempt to base control practices on a sound epidemiological foundation. Tolerances for specific chemicals have served as the basis for standards of concentrations to be permitted in the working environment. The fact that a dust-free or fume-free atmosphere was neither attainable nor essential has been faced realistically, and control efforts directed at reducing concentrations below the critical levels determined by experience . . . "

—From "Modern Aspects of Sanitation," DR. WALTER BIERRING'S abstract of a paper by DR. GAYLORD W. ANDERSON, in *J. Iowa State Med. Soc.*, June, 1943.

COMMENT and OPINION

A SURVEY shows that the loss to industry because of venereal diseases is $168,000,000 in wages besides approximately a million dollars in medical costs. Early discovery of the infected individual is important and willingness to take treatment should be a condition of continued employment.

—G. W. BOWMAN, in *Monthly Bulletin*, Indiana State Board of Health, January.

RISKS to the health of workers, arising out of industrial or occupational accidents or diseases, suggest yet another area in which an investment in preventive programs would yield rich dividends. The U. S. Public Health Service has pointed out that the prompt adoption throughout industry of already known medical and engineering controls would immediately reduce by 10% the time lost due to sickness and accidents of an occupational character.

—*Medical Economics*, May, 1943.

THE Department of Labor, reporting on what it said was an exhaustive survey, came up today with a startling conclusion. Women, it said, work better when they're sitting than when they're standing. It recommended that plants provide some seating arrangements for woman workers wherever possible. In one instance, it said, special "stand-sit" seats were installed for women, and production went up some 32%.

—*Chicago Daily News*, May 18.

UTAH State Department of Health made the March issue of its monthly bulletin, "Your Health," an industrial hygiene unit. It forcefully states the importance and need of industrial hygiene programs today, and specifically lists the disease hazards most likely to be encountered by Utah industrial workers. A description is given of an ideal plan for providing an adequate health service to workers, and the benefits to be expected. The facilities of the Division of Industrial Hygiene of the State Department of Health and the services of other agencies available to Utah industries are described. A chart showing the relationships of Federal, state, and local agencies whose services are being integrated in the "Cooperative Industrial Hygiene Program in Utah" is included in the bulletin.

—*Industrial Hygiene.*

A NEW chemical, solution that will kill pneumonia, streptococcus and influenza germs—and probably will kill common cold germs—has been discovered in the course of pneumonia research at the University of Chicago. The War Department's civilian epidemiological board reports that a thimbleful of the chemical, known as triethylene glycol and similar to antifreeze solutions can kill all pneumonia and streptococcus germs in a large room, such as an Army barracks, within a few minutes. For his four-year research in developing the solution, DR. OSWALD H. ROBERTSON, medical professor at the university, was elected to the American Academy of Sciences. He was aided in his research by three colleagues. The simplest way to put the solution into the air is to place a pan of it in an air-conditioning system.

—Press item.

WELL UP on the list of astonishing statistics belongs an estimate released jointly by the Association of Life Insurance Medical Directors of America and the medical section of the American Life Convention. These groups declare that no less than 25% of American physicians' income is paid by insurance companies! Citing 1936 as a typical 12-months period, the insurance directors say that fees paid to medical practitioners in that year totaled

more than $200,000,000. The total income of the entire medical profession in America in the same year is estimated at $800,000,000. The insurance fees are itemized as follows: Paid by compensation companies, $100,000,000; by oldline life insurance companies (more than 200 of them), $70,000,000; by fraternal organizations, State insurers, self-carriers, contract practice, group, and industrial organizations, $30,000,000.

—*Medical Economics*, May, 1943.

THE health of the worker has an important bearing on the speed and efficiency with which war materials are produced. Dental disorders, directly or indirectly, cause the loss of working time that cannot be spared if maximum production is to be maintained. Therefore, the present emergency demands that workers in war industries be assured of good oral hygiene and freedom from pain and infection through a well-planned and systematic dental porgram.

—L. D. HEACOCK, in *Dental Health*, February, 1943.

THOUGH DR. HAMILTON'S problems were wide in their scope, she never lost interest in the individual worker, she was never wanting in compassion and kindliness toward each particular sufferer who came into her ken. Again and again as she gives a case history to explain a point, one feels that it was not a case to her to be ticketed, bracketed and placed in a file, but an afflicted human being to be aided with all the strength in her power.

—From a review, by PHILOMENA HART, of DR. ALICE HAMILTON'S autobiography, "Explaining the Dangerous Trades," in *Providence, R.I., Bulletin*.

MORPHINE is contra-indicated in the acute phase of blast injuries because it tends to accentuate the pulmonary edema and obscures the symptoms of abdominal and cerebral complications . . . Morphine may be quickly absorbed from the gastro-intestinal tract if a hypodermic tablet is dissolved in one ounce of water and followed by one to two glasses of water. When the stomach is empty the effects are often experienced within two or three minutes.

—From "On the Run," in *Detroit Medical News*, May 17.

ESSENTIALS of Health Maintenance in Industrial Plants, Special Bulletin No. 213, has just been issued by the New York State Department of Labor. The bulletin contains details of medical service in the small plant and medical service in large establishments; a bibliography; selected references in the field of industrial hygiene on carbon monoxide, dermatitis, dust, fatigue, gases, lead, nutrition, silicosis, volatile solvents and general industrial hygiene, and a comprehensive appendix on procedures, recording forms and equipment. The 64-page book is adequately illustrated with half tones and diagrams. The price is 35 cents.

—*Daily News Record, N.Y.C.*

DIXIES Simplify Mass Feeding and Safeguard War-Workers' Health

THE gigantic task of feeding thousands of hungry men and women on the job calls for speed and many short cuts. When the rush is on, when help is limited, well meant health protection can suffer.

A real time and labor saving aid in this tremendous commissary job is Dixie paper service . . . Dixie Cups and Food Containers that handle a variety of foods quickly, cleanly. After use, Dixies are easily disposed of. No sanitizing problem . . . no breakage hazard.

A Contamination Point to Watch!

A lot of today's sick-absenteeism is caused by colds, sore throat, "flu", and similar easily communicated diseases. Just as important as proper health protection in feeding is adequate control at the drinking sources. Mouth contact with anything that has touched the lips of others is dangerous. Dixie and Vortex paper cups check contagion at these vulnerable points.

Dixie Cups, Vortex Cups, Pac-Kups — products of the Dixie Cup Company

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Etiologic Eradication TAKES TIME...

THE PATIENT DEMANDS RELIEF NOW

Most pruritic skin lesions require a relatively extensive diagnostic search before specific therapy can be instituted. In the interim, however, relief from the agonizing itching must be provided. For this purpose, Calmitol is specific. It exerts its antipruritic influence regardless of the causative lesion, hence it may be prescribed on the first visit. A single application is effective for hours, overcoming the desire to scratch and preventing secondary traumatic lesions. The wide applicability of Calmitol embraces contact dermatitis (including ivy and oak poisoning), food and drug rashes, eczema, urticaria, prurigo and intertrigo, ringworm, and pruritus ani, vulvae, and senilis. Physicians are invited to send for samples.

Calmitol exerts its antipruritic influence by blocking cutaneous receptor organs and nerve endings. Its active ingredients are chlor-iodocamphoric aldehyde, levo-hyoscine oleinate, and menthol, in an alcohol-chloroform-ether vehicle. Calmitol is protective, bacteriostatic and induces mild active hyperemia.

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THOSE who eat in restaurants, even the best of them, are being deprived of about three fourths of the vitamins they should be getting from vegetables. Actual figures on vitamin losses from restaurant-cooked vegetables was reported by Dr. Robert S. Harris, of Massachusetts Institute of Technology, to the American Dietetic Association. Dr. Harris advised restaurant eaters to eat early and concentrate on raw vegetables. In his study, Dr. Harris selected a restaurant using superior cooking and serving technics. In spite of this, the average loss of anti-scurvy vitamin C from vegetables during cooking was 45% and the loss of thiamin (vitamin B_1) averaged 35%. The large loss was attributed both to the destruction by heat and to the fact that the cooking water in which the vitamins are soluble was discarded. During the time the vegetables were held on the steam table before serving there was a further vitamin loss of about 15%. Only about a fourth of the original vitamin content of the vegetables actually reached the consumer. It is evident, Dr. Harris pointed out, that the customers who eat earlier and who eat more raw vegetables will be better fed.

—*Science*, December 4, 1942; quoted in Lippincott's *Digest of Treatment*, May.

E. R. SQUIBB & SONS prepare *Medical Journal Abstracts* for monthly distribution without charge to "all physicians and surgeons in the armed forces of the United States and our Allies." They send the requested number of copies to each camp, post, station or hospital, and individual copies where they have the A.P.O. addresses of medical officers overseas. The February *Abstracts* comprise 157 printed pages, with three or four summaries to the page. These are well written, thorough and informative; altogether they constitute another of the SQUIBB products, dependable for quality and accuracy. Interesting to industrial physicians and surgeons are the following: "Vitamins and Capacity for work. HILLS, H. W., *Brit. Med. J.* 2:587 (Nov. 14, 1942).—Six accident-prone workers took thiamine-HCl tablets, 3 mg. 3 times daily for 60 days and reduced their total accidents from 38 in the 60 days preceding treatment to 15 in the 60 days of treatment." (R.E.B.) "Wartime industrial surgery. FORSTER, N. K., *J. Indiana M.A.* 36:11 (Jan. 1943).—Good care of workers' health is essential in this emergency, although the nature of occupational injuries has not changed particularly because of the war. The following parts of the body were involved in injuries sustained by employees in a large war production plant: eyes, 13.0%; head, 5.6%; arms, 7.8%; trunk, 3.2%; hands, 12.3%; fingers, 48.5%; legs, 6.0%; feet, 2.2%; toes, 0.9%; and general 0.5%. Treatment for eye, head, face, and chest injuries, fractures, shock, and burns is outlined. Use of 5% sulfathiazole ointment in the eyes was discontinued because of irritation." (R.E.B.)

THE WORK of E. P. CHESTER, State Director of Rehabilitation Service, Connecticut Board of Education, is bearing fruit. Recently a "Man Salvage Clinic" for employing rehabilitated physically handicapped was postponed because there were not enough candidates. Personnel men are learning that physically handicapped people can be integrated very easily into current routine, and have taken practically all those available.

—*Connecticut Industry.*

THE major cause of involuntary absence is sickness — women's rate on this score seeming to be somewhat higher than men's. Women who are more susceptible to fatigue may for this reason take time off from continuous work in munitions plants to get some needed rest. This precaution may ward off serious illness. Brief rest periods in the plant are a practice followed by some firms for both men and women as a preventive of undue fatigue. Certainly women's home responsibilities are a definite cause of absenteeism. The duties of many wage-earners include marketing, cooking, care of children and sick members of the family, housecleaning, laundry, shopping. Other contributory factors to women's absences from work are make-shift housing arrangements, crowded and insanitary living conditions. From the viewpoint of women workers much can be done both by means of plant practices and by community cooperation to reduce absenteeism. In connection with the job, well-qualified women supervisors and special union effort are readily usable measures that help to bring good results. The management can arrange, through staggering of hours or provision of a mobile utility force in some instances, to expedite women's marketing. The community can help materially in this respect, by sufficient changes and staggering of business hours—to give women sufficient opportunity

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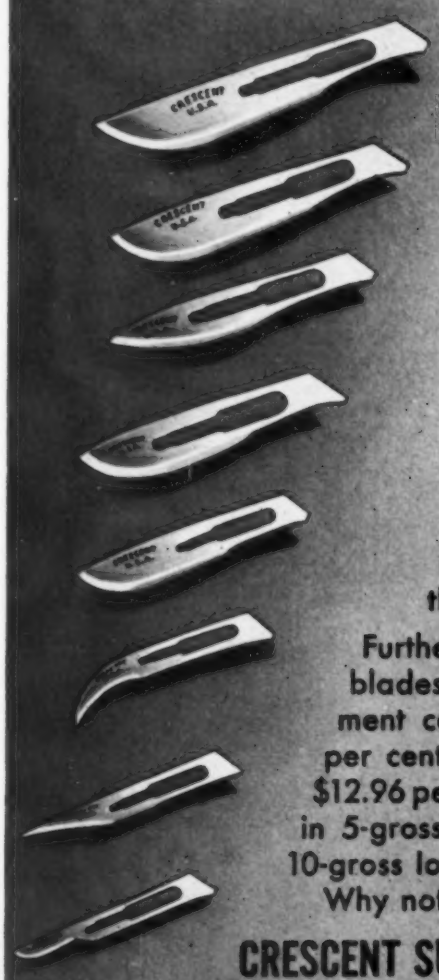

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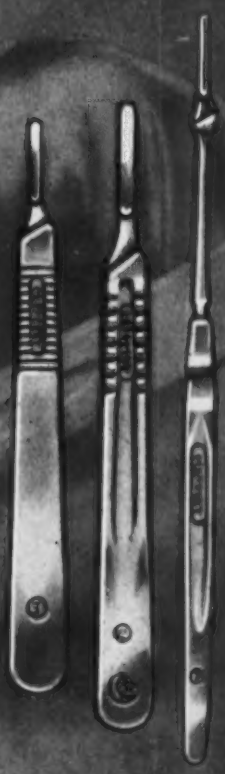

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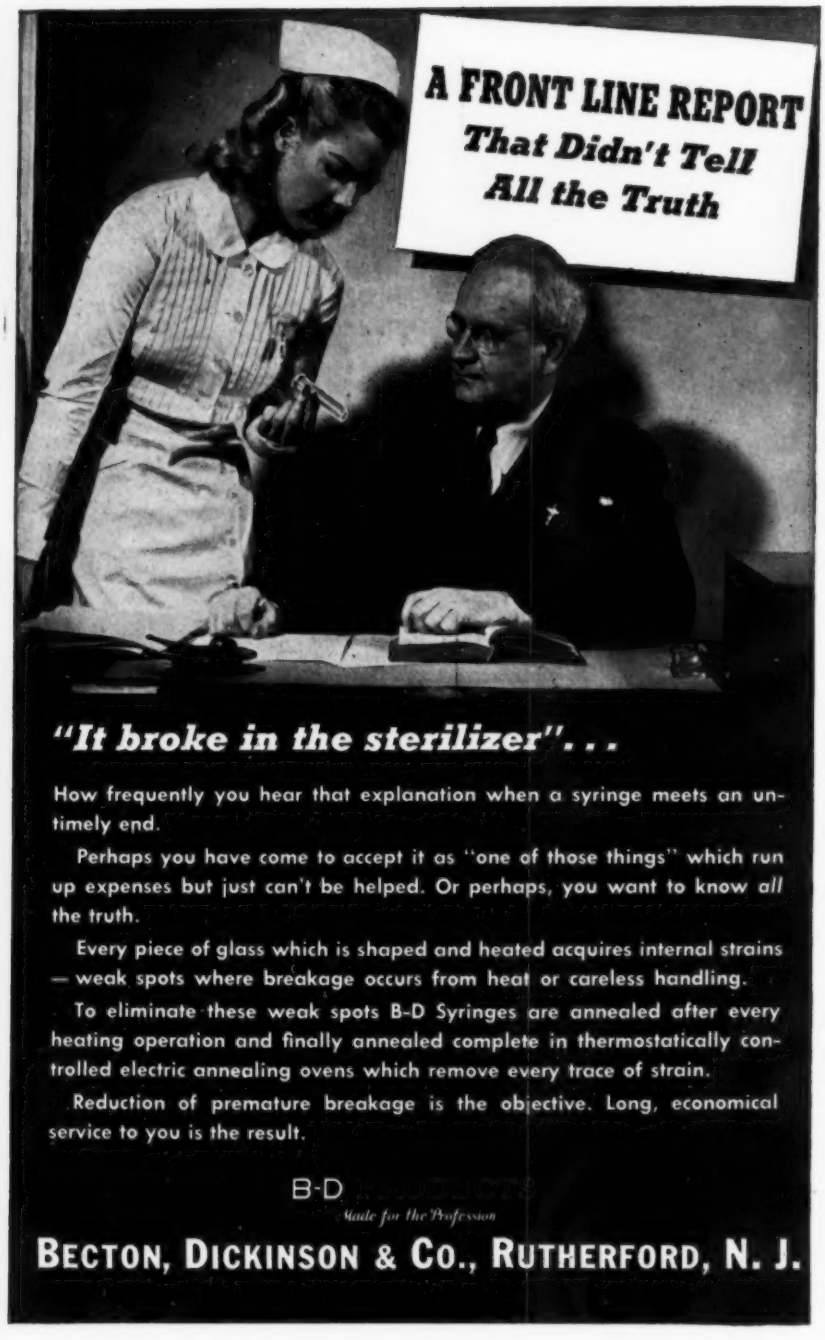
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"It broke in the sterilizer"...
How frequently you hear that explanation when a syringe meets an untimely end.
Perhaps you have come to accept it as "one of those things" which run up expenses but just can't be helped. Or perhaps, you want to know all the truth.
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in the evening—both to shop and to have access to the services of dentists, doctors, lawyers, ration boards. Community kitchens can also be set up to prepare meals for working housewives to take home to the family, thus conserving the woman's energy and preserving the family custom of eating at home. Much has been said about provision of nursery schools and other means for the proper day care of children of working mothers. But much more remains to be done in many communities to meet this growing need.

—From a talk by MARY ANDERSON, Women's Bureau, U. S. Department of Labor.

WAR plant supervisors are told how to guide workers and to check on working conditions, so as to prevent on-the-job accidents, in a pamphlet called "Safety Speeds Production" issued today (May 13) by the U. S. Department of Labor. It discusses the qualities of a good boss, how to instruct, what to teach, the woman worker, dealing with individuals, and securing cooperation of workers—all from the point of view of making safety an integral part of production. It points out important considerations in plant housekeeping, handling materials, tools for the job, machine guarding, and safety equipment. This pamphlet is one of a series the department is issuing on important problems of working conditions and war production. "Controlling Absenteeism," now available from the department, describes devices that large war plants have developed to reduce job absences. A third publication, "A Guide to the Elimination of Weight-lifting Injuries," soon to appear, will embody the recommendations of safety experts, plant physicians and personnel officers on material handling.

—*New York Journal of Commerce.*

AMONG the important reprints now available are (1): "Educational Needs in the Field of Industrial Health—with Emphasis on Medical Post-Graduate Education," and "Medical and Public Health Aspects of Heating Oil Rationing," both by LEVERETT D. BRISTOL, M.D., DR. P.H.; the former from *J.A.M.A.*, August 1, 1942; the latter from ASHVE Journal Section, *Heating, Piping & Air Conditioning*, October, 1942. (2): Council on Industrial Health, A.M.A., offers reprints as follows: DR. E. C. HOLMBLAD: "How to Get Along with Less Help"; DR. FRED B. WISHARD: "Processing Technics in Physical Examination"; DR. LEVERETT D. BRISTOL: "Immunization for Industrial Workers"; DR. CHESTER S. KEEFER: "Control of Common Respiratory Infections"; FRANKLIN C. BING: "Criteria for Evaluation of Nutrition Experience in Industry"; DR. ROBERT S. GOODMAN: "The National Nutrition Program for Industry"; DR. H. CLOSE HESSELTINE: "Women in Industry"; and DR. A. J. CARLSON: "The Older Worker"—all from the fifth annual Congress on Industrial Health, in *J.A.M.A.*, March 13, 1943.

THERE has always been a certain amount of confusion when gasoline or other solvents are referred to as inflammable materials. When we refer to a substance as being incombustible, we mean that it will not easily burn, whereas, custom has established the use of the word "inflammable" to mean something that could easily be ignited. In Webster's Dictionary, the words "inflammable" and "flammable" are defined as follows: Inflammable—capable of being easily set on fire; easily enkindled, combustible. Flammable—capable of being easily ignited; inflammable. In order to clarify this terminology, the National Fire Protection Association has recommended that we eliminate the use of the word "inflammable." They recommend that the word flammable be used to indicate ready combustibility and non-flammable for materials which are not easily ignited or set on fire. It is rather difficult to change our habits, but in the future we should refer to materials as being either flammable or nonflammable to assist in establishing a proper understanding of the characteristics of certain materials.

—E. C. BARNES, in Westinghouse Medical Department's *Safety News*, May.

ACTINIC irritations, commonly known as flash burns, of the eye have increased during the present war production. This is, I believe, due to more than one factor. Many are attending welding schools, and the increased number of welders is evident. In their first instruction they are told that they shall wear proper masks or a welding glass to eliminate those actinic irritations. There are those who will wear them conscientiously, but will from time to time while welding lift their mask to observe the progress of their work, and thus become exposed to the injurious ultra-violet rays. Some individuals

THE RATIONING OF MEATS, canned vegetables, etc., adds another dangerous feature to the already imperiled *nutritional status* of the working population.

Improperly balanced diets are now the rule rather than the exception. Workers, and particularly women, in industry inevitably will show an increase in anemias due to *dietary deficiencies*. The status of the British population is proof of this prediction. [1,2]

With the most popular source of iron—meat—limited, a safe, convenient and economical supplement is available in the form of Hematinic PLASTULES. Hematinic PLASTULES supply ferrous sulphate, now accepted as a most effective and palatable form of iron. The result: rapid and satisfactory generation of hemoglobin. Minimal dosage assures greatest economy.

"LOOK AT THE BLOOD" is rapidly becoming a *must* in safeguarding the health of industrial workers.

1. Mackay, H. M., Dobbs, R. H., Wills, L., Bingham, K., Anaemia in Women and Children on War-Time Diets, The Lancet, Vol. II, p. 32-33; July 11, 1942.
2. Editorial: Hundred Per Cent. Haemoglobin, The Lancet, Vol. I, p. 52; January 9, 1943.

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FOR quick, positive action your Pelton Sterilizer should receive thoroughly cleaned instruments.

Blood, pus and other secretions protect bacteria and promote tarnishing. So—scrub instruments *thoroughly* before sterilizing. Brush all joints and crevices in soapy hot water.

This cleaning lengthens the life of your precious instruments and ensures from your Pelton Sterilizer the fine performance which Pelton has built into it.

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can take longer exposures than others without any symptoms or signs. There are other workmen who will be walking past while the welders are working and, instead of turning their heads away from these intense lights, will turn towards them thereby becoming exposed. In the case of electric arc welding these "flashed" eyes are increasing, not particularly among welders but among their assistants. The welders who wear masks and goggles are protected by welder's "green" glass. The symptoms of actinic irritations do not usually occur until several hours afterwards, usually after the victim has been in bed asleep. This is characterized by a pronounced irritation and a sensation that the eye is full of sand. Ordinarily there is no ultimate sequela unless the macular area of the retina has received damage, which in the beginning would be an edema of the macular area and later may result in destruction.

—From "Wartime Phases of Industrial Ophthalmology," by E. O. ALVIS, M. D., in *J. Indiana M. A.*, May.

UNIVERSITY of California extension courses in industrial hygiene, which were begun during January and February, 1943, are meeting with enthusiastic response among the present and prospective industrial nurses throughout the State. Courses consisting of 15 two-hour sessions are now being given in Berkeley, San Jose, Los Angeles, and San Diego, with a total enrollment of 200 nurses, and plans are being made to give a similar course in Long Beach for approximately 90 industrial nurses who live and work in the vicinity. A course on "Surgical Dressings and Procedures for Nurses in Industry," which was recently given by a leading industrial surgeon of Los Angeles, was attended by 105 nurses. One of the courses is given during the day so that nurses who work on the night shift can attend. All emphasize industrial toxicology, in which the nurses have shown great interest. The lectures are adapted to the particular needs of the nurses attending. Thus, in the San Jose course, detailed attention is given to dermatitis and to respiratory affections due to temperature changes, because most of the nurses enrolled serve fruit and vegetable canning plants.

The courses in Berkeley and San Jose are being taught by MISS ELLA MAE BARKLEY, industrial hygiene nursing consultant, and DR. FRANCIS E. BALLARD, medical officer, of the State Bureau of Industrial Health; the course in Los Angeles by DR. E. E. DART, director of the Los Angeles City Division of Industrial Hygiene, and MISS OLIVE WHITLOCK, former public health nursing consultant of the Division of Industrial Hygiene, U. S. Public Health Service; and the course in San Diego by DR. SAUL RUBY, assistant director of the San Diego City and County Health Department.

—From "Current News of Official Industrial Hygiene Activities," April, 1943.

THE employment of doctors in the factory itself has during the last few years become an integral part of factory life. The war makes it necessary to pay more attention to the health of the working people. The call for higher output and especially the appeal to women must not involve injuries to health. It is the task of the works doctors to insure this, and the scope of their preventive activities has recently been further extended by the introduction of medical inspections at the place of work. This does away with the long periods of waiting in surgeries and leads to considerable economies in working hours. The system of works doctors has revolutionized the work of medical care for the working people, and the results of this are visible in the good state of health of the workers. Even in occupations in which there is considerable danger the general state of health is so outstandingly good that absence from work amounts to only 3% on the yearly average. In some instances medical inspection in the factories has even reduced absenteeism below the peacetime frequency. More than 5,000 factory medical stations, partly with auxiliary staffs, have so far been set up. Thousands of doctors have become accustomed to factory life, treating the workers practically on the job. It is the task of the works doctor not to treat sick persons but rather to maintain the health of his charges and to protect them from all

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Accurate gallbladder diagnosis is now more certain with PRIODAX, a new contrast medium which owes its superiority to its form and composition.

Iodine, (51.5%) firmly bound, in a stable organic molecule produces reliable, clear pictures of uniform density by the "single-dose" method.

Contains no phenolphthalein or any related derivatives, thus reducing the possibility of diarrhea with loss of contrast material.

Tablet Administration and chemical nature favor retention. Vomiting ...so often associated with unpalatable powders...is *rare* with PRIODAX.

Administration: Six tablets swallowed whole in the course of a light fat-free evening meal. X-ray exposures are made in 12 and 15 hours.

PRIODAX, β-(4-hydroxy-3, 5-diiodophenyl)-α-phenyl-propionic acid, supplied in cellophane envelopes, each containing six tablets. Boxes of 1, 5 and 25 envelopes.

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Solutions that would be entirely harmless to the skin surfaces may injure the eye severely, due to osmotic pressure changes within the membrane cells. Pure water or hypotonic solutions used in the eye favor development of edema or swelling, while solutions of a higher salt concentration than the tears may cause a shrinkage or loss of water from the membrane cells.

It is important, therefore, that any aqueous solution used for cleansing or washing the eye be very close to the same osmotic pressure or be in isotonicity with the tears which normally bathe the eye. The osmotic pressure of the tears is normally much higher than that of the blood, corresponding to about 1.4% solution of salt. Murine has been adjusted to this range of osmotic pressure.

Normally, the tears are slightly alkaline, having a pH of approximately 8.0. Marked changes from this hydrogen ion content may also cause irritation. Murine has therefore been buffered to this pH range.

Murine is indicated for regular use in industrial plants where strong light, dust, or metallic particles are prevalent. In cases of injury to the eyes, Murine is an effective first-aid preliminary to medical inspection and treatment.

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'Merthiolate' (Sodium Ethyl Mercuri Thiosalicylate, Lilly) .001%.

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influences that might prejudice their power of resistance. He is, so to speak, the industrial pastor of the workers. Diagnosis of the job is added to the diagnosis of working capacity.

—From "Public Health under Hitler," in *J.A.M.A.*, May 8, 1943.

NATIONAL Association of Manufacturers announces after an absenteeism survey in 25 of its member company war plants, that the wartime average of absenteeism among them has increased 56% since the war effort started. The present, or wartime, percentage of absenteeism was found to be 5.42% of workers as compared to 3.48% before the war. The survey was published in a 30-page pamphlet entitled "Absenteeism—Realities and Remedies." These 12 remedial steps are suggested: Pre-employment medical examination; preventives of respiratory infection; convenient lunch facilities with well-balanced foods; sufficient time allowance for meals; nutrition information for employees' families; proper ventilation; proper sanitation; plant medical supervision; plant nurses; adequate safety devices and instruction; adjustment of work schedules to prevent cumulative fatigue, and checkup of reported sick absences. And, under the heading of "morale": Appraisal of applicants' aptitudes and responsibility, pre-employment explanation of rules and relation to war effort; information about relation of individual job to war; instruction of foremen on methods of maintaining morale; use of visitors from armed forces; information about ex-employees in service; monetary incentives; incentives other than monetary, and plant posters and other exhibits.

THE MERCK Institute for Therapeutic Research, a non-profit corporation under the laws of the State of New Jersey, was founded in 1933 for the purpose of conducting investigations into the causes, nature, and mode of prevention and cure of diseases in men and animals. The determination of the therapeutic value and safety of new drugs is one of its principal duties. The Institute had its tenth anniversary on April 26. In his tenth annual report to the Trustees, DR. HANS MOLITOR pointed out that, since 1933, the size of the Institute has increased almost six times, its personnel 18 times. The new, three-story laboratory building, which is completely air-conditioned and equipped with up-to-date facilities, was occupied two years ago. Vitamins and chemotherapy are the principal fields of research. Since the outbreak of the war, only problems of immediate importance to the war effort were permitted to remain on the Institute's research program. Notable among these are Penicillin, the most powerful and least toxic germ killer ever discovered, and new anti-malarial products. The Merck Institute was included in the Army-Navy "E" Award for Excellence in Wartime Production which was presented to Merck & Co., Inc. on February 9, 1943.

SOON, according to the British Information Services, 95% of the mine workers of the country will be provided with canteens. The British government also sponsors more than 1800 British restaurants, centralized community dining rooms at which workers may obtain two-course meals for the equivalent of about 22 cents. The British restaurants also provide "cash and carry" meals which can be picked up by the married woman worker and heated at home. The remarkable growth of industrial canteen services in Great Britain came as a result of war pressures. Before 1940, canteens were relatively rare, except in the largest factories, but the dislocations of family life due to bombings and large-scale shifts of workers necessitated the establishment of adequate feeding facilities outside the home. British employers soon realized that canteens not only build health, but build morale, too. Little compulsion has been necessary to secure establishment of canteens. Formal "notice" to require establishment of canteens was given only in 248 cases in 1941. British workers who, less accustomed than Americans to restaurants, had stated earlier that they did not need a hot meal, now are demanding canteen facilities. Reports show that the number of workers served is increasing every day. Tightening of rationing, the increased employment of women, particularly of married

Food Rationing must not increase Absenteeism in 1943

EVEN when food was plentiful, surveys showed malnutrition to be so widespread that authorities called it an important underlying cause of absenteeism, accidents and lowered production capacity. Today's rationing and shortage of vital foods will make it still harder for the average worker to maintain nutritional needs.

What is the answer?

For many industries today the answer lies in Dietary Supplementation. That is one *sure* way to bring workers' diets up to the high vitamin-mineral levels needed for proper nutrition. Plants and offices that have tried this method report less absenteeism, fewer colds, less fatigue and improved efficiency.

Vimms . . . a Balanced Supplement

Before choosing a dietary supplement for your workers, consider these important advantages:

1. **All essential vitamins in proper balance*** . . . Three Vimms supply minimum daily requirements of all six vitamins.
2. **All the minerals commonly lacking** . . . Vimms supply generous quantities of Calcium, Phosphorus, Iron.
3. **Potency guaranteed**...Vimms potencies are chemically and biologically controlled. Their stability is insured.

*Journal of the A.M.A., July 18, 1942, pp. 948-9

FOR YOUR WORKERS it is equally important that Vimms are palatable and low in cost. 50¢ for 24 tablets; $1.75 for 96 tablets; $5.00 for 288 tablets.

And—most important of all—even on a wartime diet, 3 Vimms a day will make up the difference between what the average worker gets in his regular meals and the vitamin-mineral levels he *should* attain for top-notch working efficiency.

If you wish clinical samples of Vimms, please write Lever Brothers Co., Pharmaceutical Division, Dept. IM-8, Cambridge, Mass. (Offer good in U.S.A. only.)

Vimms All the vitamins *known to be essential*
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5,000 USP Units VITAMIN A	1.0 milligram VITAMIN B_1	2 milligrams VITAMIN B_2 (G)	30 milligrams VITAMIN C	500 USP Units VITAMIN D	10 milligrams VITAMIN P-P (Niacin Amide)	375 milligrams CALCIUM	250 milligrams PHOSPHORUS	10 milligrams IRON
as much as 20 pats BUTTER	as much as ¾ lb. cooked LIVER	as much as ⅗ QUART MILK	as much as 5 oz. TOMATO JUICE	as much as 2 tsp. COD LIVER OIL	as much as ⅓ lb. STEAK	as much as 1½ oz. Amer. CHEESE	as much as 1½ EGGS	as much as 2 cups SPINACH

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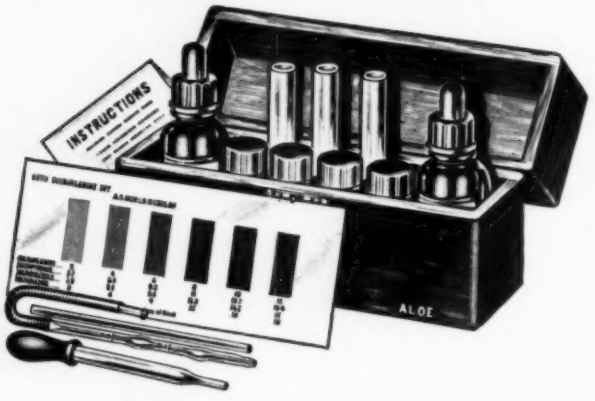

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A. Goth, "A Simple Clinical Method for Determining Sulfonamides in Blood," *Journal of Laboratory and Clinical Medicine*, Vol. 27, No. 6, March 1942.

Only 7 to 8 Minutes Average Time for a Single Test

The Goth Test Kit includes all necessary reagents and apparatus for the simple and rapid clinical determination of free sulfonamides at the bedside or in the laboratory, including sulfanilamide, sulfapyridine, sulfathiazole, and sulfadiazine. The Goth method has the unique advantage of using tablets containing the correct amounts of reagents mixed with special, selected binders that do not cause cloudiness or turbidity in the diluted specimen. The use of acetone as a protein precipitant eliminates the necessity of filtration.

The method is sufficiently accurate for clinical determinations. The accuracy of the test is limited only by the visual method of color comparison. If greater accuracy is required and laboratory facilities are available, the reading of the color can be done with a photoelectric colorimeter using an appropriate calibration curve.

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women, and the operation of shift systems have been factors in determining this altered attitude.

—OWI release.

Constitutional Inadequacy

IN THE past, numerous miracles have been wrought by the removal of foci of infections and by the use of hormones, vitamins and other newly discovered therapeutic agents, but many failures are recorded and a large amount of unnecessary treatment has been given. This diagnosis, therefore, must be used with discrimination. It is imperative that the physician, especially in borderline cases, make a careful estimate whether the findings in a given patient warrant operative interference or a long course of treatment and whether there is a reasonable probability of bringing about real health. A full knowledge of this syndrome and its use in suitable cases will undoubtedly lead to the avoidance of unnecessary therapy. But, if the diagnosis is employed, physicians must adopt a technic of explaining the situation to their patients in such a way that the latter "will accept . . . [the] verdict of constitutional inadequacy without annoyance or rebellion and will decide to mend their bad psychic ways, to hoard their energies and to live within their limited means of strength."

—From an editorial in *New England J. Med.*, on the article by DR. W. C. ALVAREZ, in *J.A.M.A.*, 119:780-783, 1942.

Snuff

BECAUSE most snuff manufacturers shy away from advertising, snuff is popularly supposed to be as extinct as the 18th-century dandies who made a fetish of inhaling it. Actually, however, the snuff industry, despite the lack of promotion for it, is in the best of health; its production and consumption are currently setting new records almost every month. Biggest reason: war workers, not allowed to smoke on the job, have discovered that this form of powdered tobacco is a good substitute . . . Modern snuff-taking is as far a cry from the old-fashioned inhaling as its current devotees are from their bewigged predecessors of the jewelled snuffbox era. Nowadays, snuff is usually "dipped" into the mouth, and held in the cheek like a kind of cud. Unlike chewing tobacco, however, it requires neither vigorous chewing nor frequent spitting—which war workers find all to the good.

—*Tide*, May 15.

Rules for Blood Donors

DONORS must be between 18 to 60 years of age. Donors from ages 18 to 21 must have written consent of parent or guardian unless married; if married, consent of mate. No one accepted with B.P. (systolic) 200 or over. No one accepted with B.P. (systolic) less than 100. No one accepted with B.P. (diastolic) plus 100. No one accepted with hemoglobin less than 80. No one accepted under 110 lbs. in weight. No one accepted within three months after a major surgical procedure. No one accepted until nine months after termination of pregnancy. No one accepted with history of tuberculosis in past five years. No accepted with undulant fever or any other disease of reticulo-endothelial system. No one accepted who has had malaria in 15 years. No one accepted with diabetes. No one accepted with history of fainting spells or convulsions. No one accepted with jaundice within past six months.

—*Fulton County (Ga.) Medical Society Bulletin*, May 6, 1943.

Weight Lifting

EXPERT advice on how heavy weights should be handled to reduce war production work injuries is contained in the recommendations of a committee of safety experts, plant physicians and personnel officers called together after requests from industry, organized labor, and government contract agencies. Material handling has long been a source of work injuries in manufacturing. Strains, sprains, and hernias incurred in manual lifting and carrying loom large among such injuries, both in number and seriousness. Incapacitating workers for seven to 19 weeks, these injuries create a serious productive-time loss. The recommendations, in a U. S. Department of Labor pamphlet called "A Guide to the Prevention of Weight-Lifting Injuries," cover the fundamentals of safe lifting and conveying in all their phases—planning and control of processes and work methods, selection and training of workers assigned to heavy manual lifting and carrying, the importance of careful and continuing supervision. The technical advisory committee, which guided the preparation of the pamphlet, was made up of representatives

HOW MANY HAVE HAD BREAKFAST ?

● A man's working efficiency depends largely on the quality of his diet, or to paraphrase a familiar saying, an industrial army marches on its metabolism.

Nevertheless, many employees come to work without breakfast, and are otherwise undernourished because of improper dietary habits, unwise economy, or the lack of adequate eating facilities.*

Even when nutritious meals are provided at reasonable cost the desired result may not be achieved because of unpredictable food preferences.

These variables make industrial nutrition a difficult problem. However, definite quantities of six essential food factors may be readily administered by means of 'Esdavite' Pearls. A normal adult requires only one pearl daily. Each of these soft gelatin capsules provides:

Vitamin A.....5000 U.S.P. units
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Niacin Amide (nicotinic acid amide).....10 mg.

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*J.A.M.A., 121:90: January 9, 1943

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GALATEST eliminates BOTTLENECKS in LABORATORIES. The Galatest Method detects the presence or absence of Urine Sugar in 30 seconds.

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of Ford Motor Company, General Motors, United Aircraft Corporation, Westinghouse, Ohio Crankshaft, U. S. Public Health Service, and U. S. Department of Labor. This bulletin will be the third in a series dealing with important problems of working conditions and war production. "Controlling Absenteeism" describes devices that large war plants have developed to reduce job absences. "Safety Speeds Production" addresses supervisors on methods which foremen have used to increase output by decreasing accidents. Requests for these publications should be addressed to the Division of Labor Standards, U. S. Department of Labor, Washington, D. C.

Fatigue

FINALLY, a word as to the prevention and management of chronic industrial fatigue. Its control rests upon the joint efforts of the management, the industrial engineer, and the plant physician. It is not enough to eliminate industrial hazards, provide suitable working conditions, and limit hours of work; the varying factors responsible for the different types of fatigue and their several mechanisms must be sought for and understood. Furthermore, those responsible for our workers must come to a realization that fatigue which slows up output does not always have its inception within the factory, the workshop, or the office. Conditions which affect the daily life of the worker—economic, domestic, and sociologic—are of equal importance and merit careful consideration. The far-reaching social implications of fatigue and its effect upon community health place the responsibility for its recognition and control not alone on the physicians in industry but also upon physicians generally. The time has come for the medical profession as a whole, and especially those engaged in general practice, to develop a greater interest in and awareness of the problems of industrial medicine. Only in this way, at a time like this, when the number of physicians available to industry is decreasing while the medical requirements of industry are steadily increasing, can we hope properly to safeguard and conserve the health of our workers and thus avert disastrous lessening of production.

—From "The Role of Fatigue in Industry," by GEORGE MORRIS PIERSOL, M.D., in *Pennsylvania Med. J., February*, 1943.

Dental Clinic

THE *Washington Evening & Sunday Star* established a dental clinic for its employees in 1922. The *Star* also provides a medical clinic, pensions, a savings plan, home owners loan plan, recreation room and restaurant space. The dental clinic is manned by DR. ARTHUR W. SHEA, dentist, and MISS GERTRUDE BERTRAND, hygienist, who give their full time to its operation. MISS BERTRAND has held her present position for 18 years, DR. SHEA for 14 years. This service is given *Star* employees at no cost to them, with the exception of payment for actual materials used. Dependent family members of employees also are eligible to receive these benefits. A new employee must have his teeth and mouth examined and their condition approved by the dental clinic before employment is given. Experience has shown that new employees especially have put off the matter of keeping their teeth in good condition, and that once a systematic check is made at stated intervals, employee health is improved. An effective follow-up checking procedure is one of the features of the clinic. Every four months each employee is notified that the records show his teeth need cleaning again, and every six months another notice informs employees that it is time to let DR. SHEA give them the once-over. An indication of the clinic's popularity is shown by the following from the annual report of the clinic for 1942; Prophylactic treatments, 1108; examinations, 545; x-ray sittings, 310; extractions, 243; tooth treatments, 156; gum treatments, 55; silicate cement fillings, 164; alloy fillings (1-Surf.), 250; alloy fillings (2-Surf.), 254; repaired plate, 48; bridge, 14; synton dentures, 26; crystole dentures, 34. The number of dependents using the dental clinic increased from 30 in 1927 to a high of 202 in 1941 and 197 in 1942. Dental work is done mostly on office time, so as to fit in with the working hours of the clinic staff as well as those of employees; no wage reductions for time spent in the dentist's chair. As the number of employees increases, one might expect an increase in the number of those who neglect their teeth. Over a period of years, however, the

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Many Can be Avoided by Dental First Aid

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POLORIS Recommended for Emergency Dental Pain

—caused by abscess, erupting wisdom teeth, neuralgia, pain after extraction and other painful conditions of teeth and gums

Accidents due to the distraction caused by dental pain, may be classed as "avoidable" in most cases—in the opinion of competent safety experts. Temporary relief, which may prevent accidents, is afforded by a POLORIS Dental Poultice—easily applied between cheek and gums. Its prompt, harmless action will usually permit employees to continue work in comfort until a dentist can be visited.

PRESCRIBED FOR OVER 30 YEARS

For over 30 years, the dental profession has prescribed the POLORIS Dental Poultice for temporary relief. Physicians, dentists and nurses in the clinics of large industrial plants regularly prescribe POLORIS for emergency dental pain. Use coupon below to obtain a supply of accident-preventing POLORIS.

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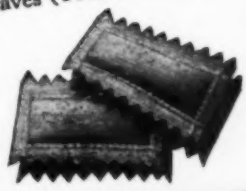

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experience of the *Star's* clinic has netted satisfactions, both personally and from a standpoint of business efficiency, which probably could not be measured in terms of dollars and cents.

—From "Dental Care for Employees," by ROBERT C. HARPER, in *Dental Health*, May.

Nutrition

FOOD provided to the worker by plant-feeding facilities or restaurants is in addition to his ration allowance. This means the industrial workers are, in effect, receiving supplemental food allowances. Provision has been made for an adequate amount of food for nutritious, well-balanced meals in all industrial cafeterias; also for food allowances to new, or extended, food services in war plants. With increasing numbers of workers now depending on in-plant meals, there is more need for workers, plant managements, and cafeteria managements to cooperate in saving time and food. Cafeteria managers can cooperate (1) by posting simple menus that can be read by persons while in the cafeteria line, and (2) by restricting the number of choices at any one meal, for example, by offering a choice between two plate lunches and a luncheon special. In this way less time is spent waiting in the line, less food is wasted, and more workers get a chance to have a balanced lunch at less cost.

An easy way to check up on a luncheon choice is to use the nutrition yardstick of the "Basic 7." This includes: (1) green and yellow vegetables, raw, cooked, frozen, or canned; (2) oranges, tomatoes, grapefruit, or raw cabbage or salad greens; (3) potatoes and other vegetables and fruits; (4) milk and milk products or cheese; (5) meat, poultry, fish, or eggs, or dried beans, peas, nuts, or peanut butter; (6) bread, flour, and cereals, natural, whole-grain or enriched or restored; (7) butter and fortified margarine.

Suggestions for luncheon specials and cafeteria menus have been prepared by the Nutrition in Industry Division to help the worker choose a lunch that packs a punch. These and many other menu suggestions are included in a new booklet, "Planning Meals for Industrial Workers," As soon as this publication is off the press, it will be sent to anyone requesting it from the Nutrition in Industry Division, Food Distribution Administration, U. S. Department of Agriculture, Washington, D. C., or one of the seven regional offices.

Teaching Health

ALMOST all physicians know a great deal about *disease*, but the meagerness of their knowledge about *health* is rather appalling. In fact, there are no clear-cut and reliable criteria to determine *what health is*, to say nothing of deciding whether a certain individual is in a condition that is normal *for him*, with his background and in his circumstances. The profession in general, and individual doctors, need to know a good deal more about health before they can teach it adequately; and teachers who do not *practice what they preach* rarely get far. The *cure* of disease is dramatic, but its *prevention* is not, and the only way to prove its value is by statistics that have interest and meaning only for *mature minds*, which are relatively rare. Moreover, it is well-known that free advice is rarely heeded, and that the pampering paternalism practiced in this country of late has convinced many people that the world owes them health, so they sit down and wait for the "government" to deliver it to them, without effort on their part. The public health departments, and various organized private agencies, are spending large sums of money on programs of mass and impersonal health teaching — most of which doesn't "take" at all promptly, though it may have some effect in a decade or two. The most important agents for the solution of this problem are the *family doctors*, who come close to the people and can deliver an *individual* message to them, *if they know how*. To be truly useful in this function, these men must train themselves, as promptly as possible, as *Doctors of Private Health*, and then go out and sell prophylaxis to their people, *at a price*. Only when these potentially powerful teachers add their enthusiastic and intelligent efforts to those of the public and private mass-pro-

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This, Mandelamine generally achieves in the treatment of cystitis, pyelitis, prostatitis, and infections due to trauma and urinary calculi.

According to physicians' reports, three to five days of Mandelamine administration frequently suffice to bring about satisfactory therapeutic results, while complete recovery is often obtained within an additional week. These results are made possible by Mandelamine's bactericidal action against Escherichia coli, Aerobacter aerogenes, Streptococcus fecalis, and other organisms commonly causative of urinary tract infections.

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duction teaching agencies, will any truly efficient program of health teaching be possible.

—From an editorial in *Clinical Medicine*, May, 1943.

Recruitment for Industry

DEVELOPMENT and recruitment of medical personnel for industry has been a difficult problem. The physician who serves full time or nearly full time in plants engaged in the manufacture of war materials or which operate under priority ratings has been generally regarded as performing duties essential to the war effort. A dependable means of attracting new medical personnel into industrial practice has received serious consideration by the procurement agencies and by the Council on Industrial Health of the American Medical Association. An experiment is now in progress in Indiana which is intended to aid the solution of this problem. The plan calls for a preliminary two day conference at which both physician and employer may concurrently learn about objectives and procedure in modern industrial health service. Subsequently, opportunities for most intensive training will be made available to any physician who is attracted to this field or who is willing to volunteer for industrial work as his contribution to winning the war. The general details of both programs have been organized by the committee on industrial health of the Indiana State Medical Association with invaluable assistance from the Bureau of Industrial Hygiene of the State Health Department and the Indiana University School of Medicine. The two latter agencies will provide the intensive training, so arranged that very small groups can be accommodated for training to start at almost any time. Experience in Indiana already has demonstrated a better understanding of industrial health objectives and a most cooperative attitude among the principal agencies involved. The use of facilities at hand on a voluntary basis to meet an urgent situation merits a successful outcome in Indiana.

—*J.A.M.A.*, May 15, 1943.

West Virginia

WE WISH to commend the State Medical Association and the State Health Department for planning and producing the Industrial Health Institutes which were held last October at Bluefield, Charleston, Fairmont and Wheeling. We believe these institutes were of great assistance to the general practitioner, as well as those engaged chiefly in industry. Every effort will be made to hold these institutes this year. It is hoped that the program will be expanded so that other cities in West Virginia will be included.

Your Committee wishes to recommend that the following objectives of industrial medicine be recognized:

1. The industrial physician should make it clearly understood by the employee and the employer that a physical examination to determine the mental and physical fitness of all workers is a practical method of job placement and is invaluable to the worker in the promotion of his physical welfare and in the reduction of loss of working time due to injury and illness.
2. To educate the workers in personal hygiene and accident prevention.
3. To maintain and improve the health and efficiency of those employed.
4. To reduce lost time due to illness or injury.

Your Committee also proposes the following principles in the practice of industrial medicine be endorsed by the State Medical Association.

(a) That pre-employment and periodic examinations be made only by qualified examiners.

(b) That pre-employment examination include a Wassermann test and x-ray of lungs when feasible.

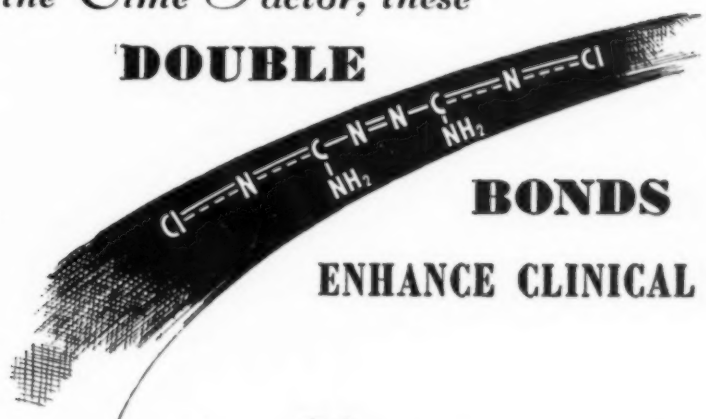
(c) That the practice of some employers of encouraging the employee to return to work too soon after an injury, merely to produce a good lost time record, be discouraged.

(d) That in all industrial plants employing 500 or more persons an industrial physician should be provided. His duties should include the education of the worker in accident prevention and personal hygiene. He should also strive to eliminate or control all health hazards within the working environment. A registered nurse should be employed. Her duties should include first aid and services as directed by the industrial physician. Also, her duties could include a visit to the home of the sick or injured employee, where the food, sanitation, etc., would be investigated. In plants employing less than 500 persons, two or more could go together in employing the industrial physician and nurse.

(e) That steps be taken to enact

Controlling the Time Factor, these

DOUBLE



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> "Following the general systemic improvement, there was diminution of pain, decrease of soft tissue swelling, increase in range of motion, better muscular tone and greater endurance."

LEVINTHAL, D.H. and LOGAN, C.E.: The Orthopedic and Medical Management of Arthritis, Journal-Lancet, 63:48-50 (February) 1943.

This is but one of the many clinical investigations, reports of which have recently been added to the large bibliography on ERTRON in arthritis.

Ertronize the Arthritic

From the reports on many large series of cases in which *Ertronization* was employed, the reason for the success of this therapeutic measure becomes evident: ERTRON is a non-toxic agent which acts systemically; beneficial results are defined not only in terms of pain-relief but in terms of systemic improvement—muscular improvement, increased appetite, weight gain and improved general condition.

Ertronize Means: Employ ERTRON in adequate dosage over a sufficiently long period to produce beneficial results. Gradually increase the dosage to six capsules a day. Maintain this dosage until maximum improvement occurs. ERTRON, the only high potency, activated, vaporized ergosterol (Whittier Process) is made only in the distinctive two-color gelatin capsule.

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legislation whereby industrial diseases would be covered by the West Virginia State Compensation Fund. Silicosis is only one of such diseases covered at the present time.—The Committee: E. F. GOTT, M. D., *Chairman;* R. H. EDWARDS, M. D., J. B. CLINTON, M. D., MAX KOENIGSBERG, M. D., W. E. BREWER, M. D.

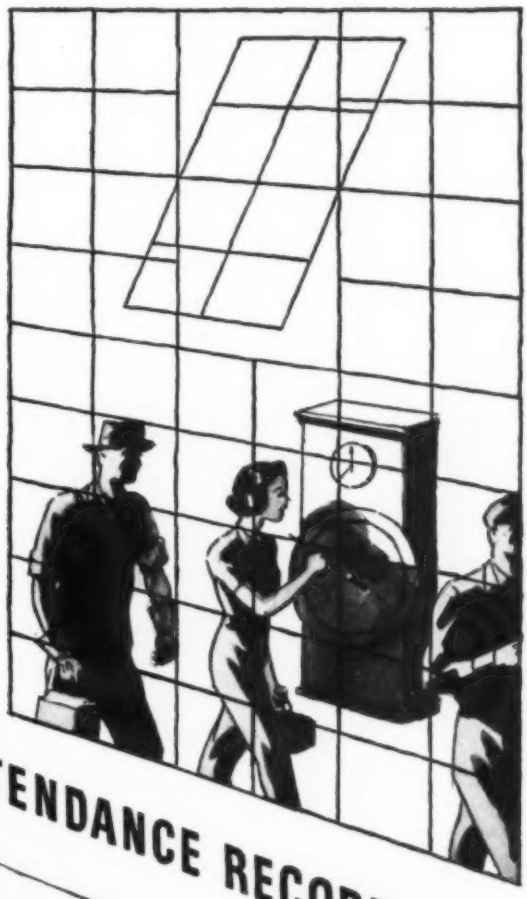
—*West Virginia Med. J.*, May, 1943.

Industrial Course

PREPARE for industrial medical service on the home front," was the theme of an educational campaign brought to a successful close recently by The Philadelphia County Medical Society. Entitled "A Postgraduate Course in Industrial Medicine and Hygiene," the instruction program covered a period of eight consecutive weeks. Sessions were held at the headquarters building of the county medical society from 4:00 to 6:00 P.M. each Tuesday, Thursday, and Saturday. The curriculum was planned by the University of Pennsylvania Medical School and by the Woman's Medical College of Pennsylvania. The State medical society cooperated. Eighty-two physicians registered—68 for the full course and 14 for parts of the course. At the close of the sessions, 67 registrants received certificates indicating that they had completed the instruction. Arrangements were made to publish in the county society bulletin the names of those who had taken the course and to make the list available to any industrial concern that might query the society about the availability of a full- or part-time industrial physician. The course of instruction covered such aspects of industrial medicine as the organization of a medical department, the examination of employes, absenteeism, the qualifications of the industrial physician, plant sanitation, industrial health hazards, surgical problems, toxicology, compensation, and medicolegal factors.

Feet

A CHART, compiled from reports from seven state labor departments, or industrial commissions, credits toes with 5% and feet 8% of lost-time accidents. Leg injuries account for another 13%. That accidents become a greater potential menace as the worker becomes fatigued is recognized. Probably there is no greater single contribution to fatigue at work than wrong shoes or poor posture. Many large organizations are conducting programs of their own with special emphasis on posture and foot care. . . . The points to be covered are clearly indicated in this recent letter from T. LYLE HAZLETT, M.D., Medical Director, Westinghouse Electric & Manufacturing Company: "In the care of the feet, as in other health activities, our work is primarily of preventive nature. First of all, workers on jobs which involve potential hazards to the feet are urged to wear safety shoes. This precaution has saved many a worker from disabling foot injuries. We give careful first aid to all conditions such as abrasions, contusions, lacerations or punctures however insignificant these injuries may seem. Whenever evidence of fungus infection is discovered, we request that the worker take appropriate treatment. Orthopedic defects are also referred to the patient's physician for correction. In addition, we use every opportunity for education on foot care. Individuals who come to the clinics are given needed instructions relative to the type of shoes they should wear, prophylactic measures, appropriate exercises, etc. In our health education program for the present year, we have planned to provide material for our workers on the subjects of posture and foot care. This would be an important phase of health education at any time but it is of particular significance now because of the increased employment of women." In planning a program to make war workers foot health conscious, some features will have to apply particularly to them, but others can be arranged so that they can be used throughout the community. While we suggest the women war workers as a particularly important group to dramatize in many localities, remember that the general public is also to be included. . . . A booklet or folder on foot care is valuable. It can be so written that it applies to everyone, or is confined to a special group. Some important suggestions for factory workers are: Provide comfortable, foot supporting shoes, correctly fitted, for working hours. On jobs that involve potential hazards to the feet, wear safety shoes. Avoid wearing old, run-down shoes, or discarded "fancy" shoes for work. Avoid open-toed or high-heeled shoes, or shoes with worn, "floppy" soles. Try to change shoes in the middle of your work period; rests both shoes and feet. Visit your shop clinic, or your own podiatrist, if your feet hurt continually or seem to be more than normally tired after a



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3. Lessen *fatigue* on the job
4. Reduce colds and grippe
5. Cut down absenteeism by those participating

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day's work. For ordinary fatigue, plunge the feet alternately into hot and cold water, then massage vigorously with a turkish towel. Then, if possible, relax with the feet high on a pillow. Feet should be bathed at least once a day. If you stand at your job—learn to stand correctly! Improper stance will cause body fatigue without fail. Ask your shop nurse or physician about this. With this combine one of the exercise series—rising on tiptoes—raising toes off the floor—walking a chalk line—toes over book—walking on sides of feet—bending feet toward body—bending feet away from body.

—*Boot & Shoe Recorder*, April.

Electives in Industrial Health

UNIVERSITY OF UTAH Medical School, now offering a complete four-year medical course to the aspiring student, has listed industrial health among its primary objectives, according to a summary presented to the University faculty recently by DR. A. CYRIL CALLISTER, medical school dean. "We will lay particular emphasis at the moment on electives in industrial health," DR. CALLISTER said. "The student who elects this in his fourth year will go into the mines, smelters, factories, etc., and study the occupational hazards, the industrial diseases, the safeguards employed to minimize industrial accidents, the measures used to prevent occupational diseases, the plant sanitation, the water control, the sewage disposal, the food inspection, the immunization program, the Workmen's Compensation Act, industrial insurance, pre-employment examinations, estimates of percentage of disability, personal hygiene of workers, and so on. No medical school in the country teaches such a course at present. We aim to do so. We have the location and the facilities. After the course gets going, industry will knock at our doors asking for our young doctors that we have trained in industrial health." Commenting on the research side of the industrial health problem, the dean said: "We have in Utah many local problems to be solved in medical research. We have a comparatively large amount of silicosis, a disease peculiar to the mining and smelting industries in which particles of silicon dioxide infiltrate the lung, producing a condition which causes complete disability of the worker after various periods of exposure. We have a new occupational disease law which places upon industry the burden of caring for people who suffer from diseases resulting from the work they are doing, although little is known about what occupational diseases arise from the industries in Utah and still less is known as to how to prevent them. This in itself is a fertile field for investigation which can perhaps save industry large sums of money, lessen absenteeism and protect the health of our industrial workers. Our problem, and it is perhaps our biggest problem, is to educate the laity and industry to the values of medical research. Much of it can not be expressed in dollars and cents, but must be looked upon as an over-all contribution to human welfare."

—*Salt Lake City Deseret News*, May 25.

Nurse Duties

THE STUDY of the nurse's duties outside the medical department revealed that they may range from selling defense bonds to delivering babies! Often included are such decidedly non-professional activities as attending funerals and weddings; writing letters of congratulation and condolence; doing secretarial and clerical work in other departments; personnel work; finger-printing and photographing employees, giving out identification badges. It was recommended that "the nurse's activities be limited to those of the medical department." To eliminate the need for the nurse's engaging in non-professional activities, the committee advised "that non-professional clinic assistants be employed in so far as possible and that the following duties be assigned to them: (1) securing of specimens and care of specimen bottles; (2) filling of hot-water bottles and ice bags; (3) bed making; (4) sterilization of instruments and supplies; (5) assistance with dressings; (6) making surgical supplies; (7) care of change rooms, rest rooms and toilets; (8) training of matrons." It was further recommended that there

TO REDUCE ABSENTEEISM due to urinary infections

The increasingly urgent need for manpower makes it essential that time lost through illness be reduced to the minimum. This applies to every type of worker—administrative and professional, as well as agricultural and industrial. America needs her total manpower for total victory.

When a patient suffers with one of the common urinary infections, Pyridium is of decided service. This is especially evident in the milder, ambulant cases of urinary infections. The prompt and effective symptomatic relief provided by Pyridium contributes to a more rapid recovery, with the result that the worker can be returned to his job sooner than would otherwise be possible.

Clinical experience extending over more than a decade, as reported in the published literature on Pyridium, testifies to its prompt and effective action, and its freedom from narcotic or irritant effects.

Pyridium is convenient to administer. The average oral dose is 2 tablets t.i.d. *At this dosage level, it possesses the combined advantages of relative non-toxicity, effectiveness in the presence of either acid or alkaline urine, and local analgesic effect on the urogenital mucosa. Literature on request.*

More than a decade of service in urogenital infections

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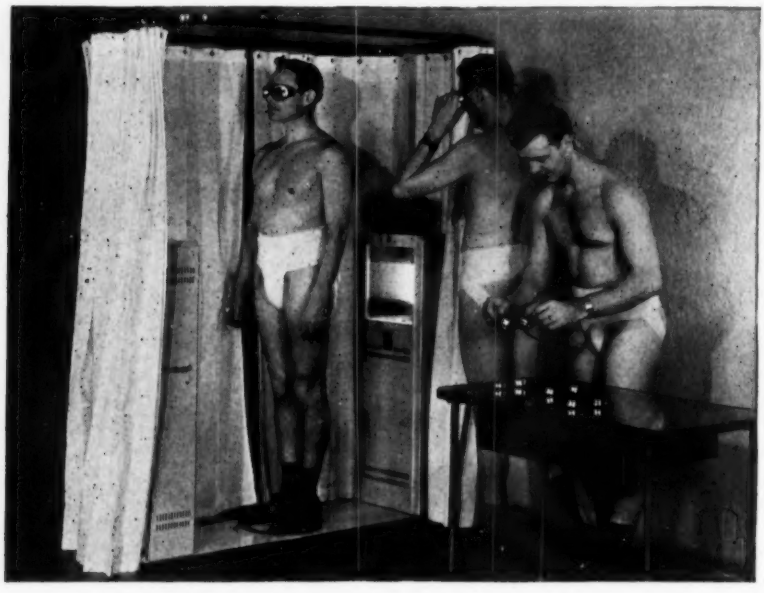
be written instructions governing the activities of the non-professional clinic assistants and that such assistants be supervised by the nurse.

—From "Points to Remember from the Industrial Nurses' Conference," by POLLY ACTON, R.N., in *Trained Nurse & Hosp. Rev.*, May, 1943.

Trusses

THE WRITER is attached to the Navy medical corps, stationed at a huge shipyard which employs 60,000 workers. He has personally seen more than 20,000 men pass through the medical office. We examine some 200 applicants for jobs each day. About 8% have hernias, about 20% relaxed rings. This percentage is rising each month, due to the fact that the older men are applying for the jobs. Our doctors rule that before the applicant with a developed relaxed ring or hernia can come to work he must have a suitable truss. The applicant rarely quibbles about it. He goes out and buys the truss. When he returns, his truss is examined for fit and quality, and if found satisfactory he goes to work at once. The doctors are particularly aware of the relaxed ring or hernia because any injury or complications resulting from it makes the firm or government responsible; that is, the worker can make a claim for compensation. The truss, therefore, is regarded with important value in industrial work today. It reduces absenteeism and prevents unnecessary costs in compensation. The worker is needed at his job to meet production quotas. The truss becomes a real aid in war production. In our shipyard alone we recommend about 15 trusses a day. The doctors insist that the truss be of good quality, costing from $8 to $15, though we do not specify price. The individual is warned against being fitted to a truss in a drug store or like establishment where the clerks have little or no truss-fitting knowledge or experience. We try to distribute our truss recommendations impartially among a few reliable surgical supply dealers. We have found that some dealers consistently do an expert and conscientious fitting job while others are not so reliable. Naturally we tend to steer our applicants to the places where the better job is done.

—From "Trusses Have Gone to War," by ROSS ANTHONY, in *Surgical Business*, May, 1943.



TWO MINUTES PER WEEK for GREATER EFFICIENCY and LESS ABSENTEEISM

The indoor worker during wartime gets only a fraction of the sunshine which he found so beneficial in previous years.

Even on weekends, curtailment of pleasure driving keeps many employees indoors and renders them more subject to colds and other time-wasting illnesses.

At negligible cost per treatment, industry now has an opportunity to provide regular and adequate ultraviolet irradiation for all employees, thus reducing absenteeism and helping the war effort—

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a compact, portable unit providing high intensity ultraviolet, automatically controlled.

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American Radical

HE KNOWS the U.S.A. is the "best damn country on the globe." He sticks to those early principles of "life, liberty and the pursuit of hapiness." Freedom of speech, freedom of religion, freedom of press and freedom of assembly are not mere catch phrases to him. He will fight those who deprecate personal freedom as an old-fashioned philosophy not applicable to this age. He is fed up with "stuffed shirts," and equally detests the long-haired gentry who would make over the world by next week, or the week after. This global "freedom from want" and "freedom from fear" stuff will not stir him too much. Somehow it does not quite add up, morally or financially. He is smart enough to perceive that complete social security is akin to slavery, and prefers a certain amount of insecurity. He would like to see jobs for all, but figures that some premium is due for extra effort: that "freezing" philosophy by government, finance or union is entirely foreign—it follows through permanently as the caste system. He reflects on the "Economic Royalists" of yesteryear, and studies the Political Royalists of today. He recognizes that the powerful elite now stem from the alphabetical bureaus, and that the American individualists are from across the tracks. He remembers the governmental wise crack, "The people are too damn dumb to understand." He knows that today's militant reformer, if he makes it, is the reactionary of tomorrow.

—STANLEY W. INSLEY, M.D., in an editorial in *Detroit Medical News*, May 31.

Vitamins

SHOULD there be any shortage of foodstuffs, either because of inability of available manpower to harvest or to process food crops, or because of transportation difficulties due to the war, the possibility of the supplementary feeding of vitamin-mineral concentrates will take on a new significance. Present thinking on

Write for complimentary package of Foille in New Special Gelatin Tubules.

A BETTER PROGNOSIS IN BURNS WITH FOILLE

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Effective Emergency Treatment—Quickly controls pain, helps mitigate shock, reduces need for opiates. May be employed before or even without debridement.

Effective Later Treatment—The soft coagulum produced permits free movement of joints and extremities—thus lessening the danger of contracting scars.

Foille is easily and quickly applied—by sponge, brush or sprayed on.

Foille saves the nurse's time—frequent changing of dressings is unnecessary.

Foille saves the patient's time—aids toward quicker, complete recovery.

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PLANT AFTER PLANT gives definite reports that occupational dermatitis has been practically eliminated by a planned procedure using Tarbonis Cream.

The medical director of an Ohio ordnance plant with four hundred employees reports that a year ago cases of dermatitis were averaging between 30 and 40 a week. Today, after consistent use of Tarbonis Cream, there hasn't been a case of dermatitis in this plant for over six months. The same irritating factors are there; cutting oils, solvents, chemical irritants; the work is the same, Tarbonis made the difference.

This is just one instance. There are many more. Tarbonis Cream is not just a protective cream—it is a treatment and a preventative for most forms of industrial dermatoses.

Some plants of the following companies listed are among the many prominent users.

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the feeding of vitamin concentrates to wartime industrial manpower may perhaps be summed up somewhat like this: (1) Vitamins should not be fed to the worker unless deficiencies are found by medical and laboratory tests, which can now be performed with relative ease. (2) At present industrial medicine believes a man who is well fed according to high standards of good nutrition does not need any vitamin pills. (3) Good nutrition depends upon good food habits. We are all agreed that most people do not have good food habits and that they must be taught to cook and eat the nutritious foods in the right proportion if they are to enjoy optimum health and capacity for work. (4) The food habits of people cannot easily be changed until their living habits are changed. That is, if they do not spend enough time on proper cooking, if they eat of canned foods almost entirely, or at poorly managed cafeterias and restaurants, they may be in grave danger of not receiving the protective elements of foods needed to maintain optimum health. (5) If people do not get vitamins as a result of their food habits, however, then they should get vitamins in concentrated form in order to avoid deficiencies and the effects these deficiencies have on their health and efficiency.

—From "Food, Work, and War," published by the National Association of Manufacturers, New York.

Absenteeism

THE following is from letters to the editor of *J.A.M.A.*, June 2, 1943 (p. 395): "There is at present a great deal of justified comment on the widespread problem of absenteeism in war industry. A number of clear studies have demonstrated that the question is not simple and demands an attack from many different sides, a very important one being the rejuvenation of the workers' sense of pride and responsibility.

There is, however, one phase of this inquiry, relatively small yet important, which is generally overlooked and which can be handled, in large measure, by the family physician. Briefly stated, the real contribution he can make is to take a just, firm stand on requests for "certification."

These requests fall roughly into three types, which I will describe in the order of their importance:

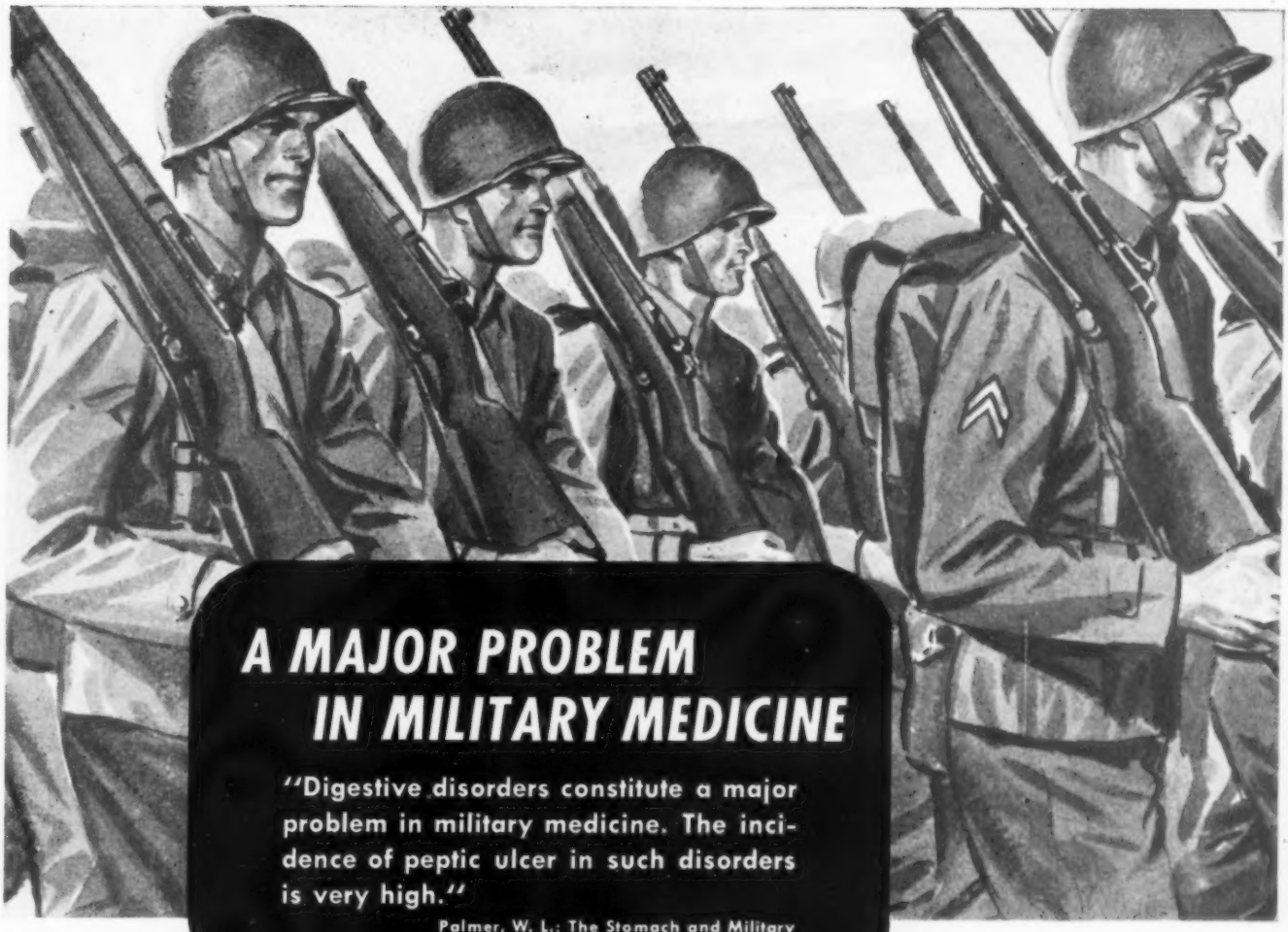
Request for leave of absence because of illness: The generous family physician too often recommends long holidays for minor disorders. A recent example comes to mind. A young woman came to the hospital with a note from her doctor asking that she be granted four to six weeks leave of absence for laryngitis. Careful examination by a certified specialist revealed trivial congestion of the vocal cords. The patient was informed that such a leave could not be granted and she stormed out of the hospital in a fit of anger. Numerous similar instances could be cited in which holidays ranging from two to four weeks have been requested for slight, easily corrected disorders. It is not only unpleasant but, for various reasons, also quite imprudent to contradict the family physician; yet this often has to be done. In this emergency it is the function of every physician to see to it that healthy workers are kept on the job as regularly as is humanly possible.

Request for change of shift, the second source of trouble: Most people do not care to work at night. They will think of every conceivable excuse and ask the busy family doctor to certify it. In one "the night air is unhealthy"; in another "it strains his eyes"; in another "it aggravates constipation"; in still another "it is causing bronchitis." When such requests are denied by the industrial physician, discontent and a feeling of unfair treatment are created. As a result, workers are determined to "get even" at the first opportunity and take unwarranted time off. A few sympathetic moments with a firm, unprejudiced family doctor could eliminate this source of friction.

Request for change of job, the last common trouble maker: It is astounding to note how readily the family doctor certifies that certain fumes, gases, vapors or dusts (about which the patient is poorly informed) are "dangerous" and "poisonous" to the patient, who must immediately be removed to another safer job. It is hardly necessary to point out that every possible precaution is taken in modern plants to safeguard the worker against hazardous exposure. By simply inquiring by telephone what material is used, what the hazard really is and what precautions are being taken, the family doctor can avoid panic, confusion and unnecessary "layoff" to "clear the body" of these alleged poisons.

These special problems are aired with no critical or malevolent intent. The family physician is extremely busy these days and can hardly be expected to be aware, always, of the difficulties of wartime industry. My

—Continued on page 413.



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"Digestive disorders constitute a major problem in military medicine. The incidence of peptic ulcer in such disorders is very high."

Palmer, W. L.: The Stomach and Military Service, Jnl. A.M.A., Aug. 8, 1942.

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This magazine is published to promote sound thought upon and concerning industrial medicine and traumatic surgery. To that end it will contain articles, news items, reports, digests, and other presentations, together with editors' comments. The editorial policy is to encourage frank discussion. On this basis contributions are invited.

Industrial Medicine

Reg. U. S. Pat. Off.

The editors will exercise care in checking on the accuracy of data printed, but in all other respects articles and opinions of which expression is allowed are the opinions of their authors—the editors reserving in all cases the right to comment on the same, in the current or any subsequent issues, as they may be inclined.

The Journal of Industrial Health, Occupational Diseases and Traumatic Surgery

With which are consolidated "The Industrial Doctor" and "International Journal of Medicine and Surgery."

The Science, the Law and the Economics of Industrial Health

Volume 12 June, 1943 Number 6

Industrial Health

—Its War and Postwar Significance—

C. O. SAPPINGTON, M.D., DR. P.H.,
Industrial Consultant,
Chicago

THE peak of industrial employment has been reached and there can now be no doubt that the health of the working population is of the utmost significance in the conservation of manpower and in the production of war materiel.

It is the purpose of this paper to point out some of the important problems during and after the war, and to consider some of the solutions of these problems.

It is possible to classify the war and postwar problems of industrial health into those of medical administration, those of public health in industry and the community, and finally, those relating to industrial hygiene and sanitation in the plant. It is obvious, however, that these overlap somewhat.

Venereal Disease Control

IT SHOULD be understood that this is a problem primarily affecting the community and is, therefore, one of public health interest, not one of industrial responsibility. The diagnostic procedures should consist of a thorough physical examination supplemented by laboratory tests, including serology, and treatment by a family physician or a clinic. In a survey of 77 plants recently, it was the practice of one-third to reject all applicants who were positive reacters, while two-thirds of the plants accepted such persons when there were no contra-indications, these being communicability and central nervous system or cardiovascular involvement.

Nutrition

THIS is a subject which has held great industrial interest since more than 20 years ago, when a very fine program was initiated at Eastman Kodak Company, Rochester, New York. Lately Westinghouse Electric & Mfg. Company and Servel, Inc., have been active in this field, issuing material which has been of great help. Rationing will probably bring some difficulties. The principal factors involved in industrial nutrition are the provision of an adequate diet for the worker, both at home and in the plant, and the education of the worker and his family—special care of underweights and overweights—and the use of nutrition advisers and dietitians by industry and public health groups. The subject of vitamins has been met by an almost bizarre public reaction. It is admitted by the authorities that the wholesale purchase of vitamins at drugstores by the public is far beyond the control of those who are in a position to give advice, but in industry this is not the case—the choice lies with the officers and industrial physicians in each employment situation.

Immunization

ROUTINE vaccination for smallpox should be done on all persons who have a vaccination scar five years or more old. The question of respiratory disease and cold vaccines is still an undecided one in scientific circles, although empirically such vaccines are used in many industries today. Clearly there should be a continuance of research work and also application to human needs with proper controls, so that more adequate procedures may be classified and standardized. It is quite possible that other types of immunization are not relatively important in industry.

Preplacement and Periodic Examinations

THE tendency at the present time is to streamline these services to the best utilization of the physician's time by the use of nurses as physicians' aides to take all the history and also do certain of the examination procedures. Certain it is that intelligent nurses can be trained to do a great deal of the work, leaving the entirely medical procedures and the interpretation of mechanical results to the physician. Examinations should be adjusted to use more men over 40, and should be based more on the requirements of the job, revising the standards of the examination in accordance with these principles. There is at the present time a trend to minimize the importance of the past personal history, but this is a question that must be decided by each physician. There are some instances where the past personal history would be of great importance and it is difficult to prophesy in advance where such data would not be important. There should be no relaxation with reference to periodic examinations and the industrial hygiene engineering data with which they should be associated, but these should also be streamlined to make the best use of the time of the professional groups.

President's Address, Annual Meeting, CENTRAL STATES SOCIETY OF INDUSTRIAL MEDICINE AND SURGERY, Chicago, May 18, 1943.

Women in Industry

THE types of work which women can do have now been standardized fairly well and can be referred to when anyone wishes information on this point. A list of these has been prepared by DR. C. D. SELBY for General Motors Corporation, and by various groups, including the Women's and Children's Bureau of the U. S. Department of Labor, which has published information on this subject. Most of the authorities agree that all women should be examined thoroughly, but there is a disagreement regarding the making of pelvic examinations; a rational approach to this problem seems to be to make pelvic examinations only on married women and particularly if indicated by the history; this seems to be practicable. X-ray films of the chest are decidedly important, particularly in young women because of the high tuberculosis rate among them. A female counselor and health maintenance service has been found to be very successful in experiences of many years of dealing with women in industry by DR. MAX BURNELL, of the A-C Spark Plug Division of the General Motors Corporation, Flint, Michigan. The special problems of the psysiology of the female (menses, pregnancy and the menopause) of course come in for a great deal of consideration among women workers. Hours of work vary in different states, so that it would be necessary to be informed regarding the legislation in the state concerned. Clothing has been receiving a great deal of attention, but apparently women workers frequently go back to slacks and sweaters, even when uniforms are provided by the company. Proper restroom facilities and hygienic surroundings certainly go a long way toward making satisfactory working conditions. The use of women physicians is increasing, particularly with respect to the handling of female employees; it is obvious that this is a natural arrangement, especially where pelvic examinations are found necessary in the employment of older and married women. Health education is probably one of the most important ramifications of the subject of women in industry, particularly with reference to getting the cooperation of women in discussing their physiological problems.

Dermatoses

THESE are the most frequent occupational diseases in industry, and cutting oils are the most frequent cause, not because of the marked irritation of such cutting oils, but because of their wide usage. Soluble cutting oils rarely cause dermatitis, but the insoluble do, and they may contain sulphur and chlorine, the latter being particularly irritating at times. The oils are practically sterile, however containing bacteria on occasion but usually no pathogens. In the prevention program, personal cleanliness is of the utmost importance and outranks all other procedures, protective clothing of various types, particularly impervious aprons, sleevelets and gloves coming second, and ointments of protective nature low down on the list, according to DR. LOUIS SCHWARTZ, the eminent authority in this field.

Absenteeism

THE greater part of absenteeism is caused by non-industrial illness. However, it is the short-time absences which are most in the public eye. As recently pointed out by DR. FRANK F. TALLMAN, a psychiatrist of Lansing, Michigan, the worker may be sick of many different kinds of things—he may be sick of love, whiskey, taxes, poor housing, transportation, etc. DR. LOWELL SELLING, a psychiatrist of Detroit, says that individualization, and not mass methods, is the solution to the problem of short-time absenteeism—the total man is the concept and his reaction to all factors must be considered. The individual worker must be assured of his importance in the total scheme of things, according to DR. LYDIA GIBERSON, consulting psychiatrist to the U. S. Public Health Service, which means no matter whether he makes a set-screw or a tank, he must realize that his part should be well done in order to win eventual victory.

Fatigue

THERE are many factors involved in fatigue, those of industrial, non-industrial and mixed characters. Apparently, the most important are hours of work, rest and sleep, adequate nutrition, proper recreation, and the will to work, the latter being especially important. We must not only provide safe and healthy places to work, but must realize that the physical and mental health of the individual is one of the most important factors in prevention of fatigue; what the employee does in the 16 hours outside of the plant can upset the best industrial health program inside the plant. By health educational methods, streamlined to meet modern needs, we should be able to make workers physically and mentally comfortable inside and outside the plant.

Tuberculosis

THIS disease always increases during wartime because of strain, anxiety, lack of adequate rest and food. If the last war was any criterion, there will be an increase in tuberculosis among industrial employees—the increase having already occurred in the general population. Fortunately the cost of case-finding, which is industry's real avenue of usefulness in this problem, has now reached a new low. The only industrial exposure which has a specific relationship is severe exposures to dust of high free silica content.

Rehabilitation

REHABILITATION, physicial, mental and vocational, forms an important field now and will be more important after the war. The Connecticut Clinic, under the guidance of MR. E. P. CHESTER, of Hartford, has done outstanding work by securing the cooperation of labor, management, physicians and psychologists. Here, handicapped persons have been fitted to jobs and the cooperation of labor and industry with professional groups has been exceedingly interesting and successful. Handicapped persons will be used in increasing numbers in spite of objections concerning liability. Waivers have been suggested in some states, and in Michigan at the present time there is such a bill pending. There have been some supreme court decisions to the effect that when an injury is due solely to the handicap, the employer is not liable. Concerning the subject of waivers, Connecticut has had a history of handling some 5,000 waivers annually without difficulty. Connecticut has a very carefully written statute, however, which provides for a thorough physical examination in connection with the waiver provisions. A prehabilitation clinic has been quite successful at Rochester, New York, under the guiding influence of DR. W. A. SAWYER. A manual on employment of women and the handicapped by the U. S. Civil Service has been stated to be a real contribution regarding etiology and disability, which have been correlated with job capacity.

Health Education

THIS is the only logical approach to the efficient cutting down of the tremendous losses due to non-industrial sickness. The employee should be taught what he or she can do to take care of themselves. The kinds of health education which are available are

varied, and there is considerable difference of opinion as to which are best, but it is generally acknowledged that an appeal to the eye and the ear by the use of sound and photographs is ideal for practical purposes, as exemplified in sound-slide films, the price of which is also within the means of most industrial establishments. Moreover, this kind of presentation is of particular advantage to physicians and nurses and safety directors who are usually so busy that they do not want to take the time to prepare material and present it.

Processes and Materials

DURING wartime with the great rush of production and the difficulty in adapting to changed conditions, there will be new processes and materials, as well as new appearances of old hazards and it is because of the tremendous intensity and speed of production by labor and management that health may be lost in the shuffle, as LT. COMMANDER J. J. BLOOMFIELD has so well expressed it.

Sand-blasting, grinding and buffing, in which dust is a by-product are not new processes, and can be used safely, but safe provisions are not always made under war production conditions. Dust control at the source is important in all of these processes and can be so arranged as to control the hazard of silicosis and protect a man against this disease.

The use of x-ray apparatus for testing purposes and the use of radium and fluorescent materials for dial painting may be injurious and, therefore, protective measures must be provided for these procedures.

In the welding of tanks, it has been found that fluorine and chromium compounds are given off, and that the protection of the eyes and the respiratory system is necessary. Thus far no manganese problem has been indicated in these processes.

The making of synthetic rubber has also indicated that a problem may exist if not properly supervised—exposures to the handling of, or creation of, vapors of acrylonitrile should be guarded against and the men properly protected by rubber footwear, gloves and the use of a lifeline when cleaning out tanks, as well as proper ventilation at various stages of the process.

The use of chlorinated naphthalenes and diphenyls on account of their insulating qualities and their water and flame resistance has found wide application. Already dermatitis has been experienced, and information is now being collected on systemic effects, there having been some instances of liver damage reported.

The use of various materials in the manufacture of explosives, such as toluene, TNT, tetryl, lead azide, mercury fulminate, and the various nitrates, needs also proper protection against the hazards of systemic effects and also the more common dermatitis outbreaks.

Magnesium casting has presented a very definite difficulty, what with exposures to fluorides and sulphur dioxide caused by oxidation inhibitors, chromium compounds from pickling as an anticorrosive, and carbon tetrachloride in the spraying operation to chill the metal, as well as magnesium oxides. The most important of these are the fluoride gases.

Similarly, in the electric welding of armor plate, fluoride compounds and chromium are involved; the latter, however, does not figure as an important exposure because of its type.

Noise control has also presented a problem in certain types of industries, particularly in the testing of airplane motors where the noise goes up to 140 decibels. Reduction of noise has been largely accomplished by insulation and dampening processes supplemented by special periodic examinations of the exposed workers.

A new lead hazard has apparently appeared in the use of a new silver solder which is higher in lead to the extent of 84% in order to save tin. In using this solder, it requires 100 degrees higher temperature to melt than the old so-called 50-50 mix. Another metal, cadmium, also is being used considerably more extensively in electroplating, and may present the necessity for careful protection.

Among some of the older materials and processes, which under new conditions may need to be well supervised, are the uses of plating solutions; the lead being specified in governmental formulae for paints; the use of methanol, and the occurrence of carbon monoxide in steel metallizing processes where it has been stated to occur as high as 500 parts per million, which is five times the permissible standard.

Postwar Problems

IN DISCUSSING the problems which will come after the war it is necessary to keep in mind that some of these may be anticipated by postwar planning. However, as MR. CHARLES KETTERING, the famous scientist, has remarked, one must look at these plans to see if they are really plans or whether they are merely wishes; moreover, MR. KETTERING asks the question "will human nature be any different after the war from what it was before?"

It is impossible accurately to predict what will happen, but certainly one can state that there will be considerable expansion with reference to civilian goods; transportation, especially by air; expanded home-building programs, using prefabricated houses; and the production of a great many other things including new automobiles, which were held down during the war period. Along with these types of expansion will come health problems associated with them, and they will need to be given attention by medical men, hygienists, nurses, safety directors, and others.

Of the new scientific and technical developments which may be expected, there will probably be greater use of light metals, such as magnesium and aluminum; greater use of electric welding, which has only begun to be appreciated in its industrial applications; the more extended use of synthetic rubber, which of course is now swinging into production on a comparatively large scale; the use of plastics in various ways not now considered usual; and dehydration processes of food accelerated by the war effort will also come into greater usage.

In some of these processes there will be attendant health hazards, which can only be indicated now, but on which planning will have to be done in order to meet the problems involved.

In health services in industry in the future there will be greater demands on the medical and health personnel, especially with reference to placing applicants in jobs for which they are best fitted; there will be greater developments no doubt for the measurement of mental capabilities, with proper adjustment to the job. There will be easier methods of placement and the evaluation of mental and physical standards, all of these to be worked out on a basis whereby they may be applied to individuals by mass methods.

Another group of problems will center around socio-economic-medical relationships and one of the most prominent of these will be the rehabilitation of the handicapped, including war casualties, and reintegration of these into industry. Already there are excellent programs of rehabilitation, but there will also be difficulties arising from the legal implications of these methods and the assumption of responsibility by industry in accepting handicapped persons. At present this is a medicolegal problem which has so far baffled any solution worthy of the name, and is bothering legislators, industrialists and labor no end.

The extensive use of women in industry will offer a problem which will probably reach its maximum pro-

portions during postwar adjustment. It is reasonable to believe that medicolegal difficulties will present themselves in considerable volume during this period on account of the fact that in many instances it is impossible to justify a pelvic examination of all women employees, and therefore avail oneself of accurate information at the time of employment. There are all sorts and kinds of possibilities which may arise in this way and it is, therefore, important that both labor and industry take measures to protect the rights of their respective groups.

Finally, it should be stated that whatever gains are made in the amount and quality of health service in industry should be preserved for the use of the millions of workers continuing in production during the postwar period. It is perhaps trite to twist an axiom, but one cannot help but paraphrase the old adage by saying "In time of war prepare for peace."

Routine Serologic Testing

—of 15,000 Employees of the Home Office of the Metropolitan Life Insurance Company—

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and
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THIS is a report on routine biennial Kline diagnostic and Mazzini flocculation tests for syphilis made of 15,000 employees, clerical and non-clerical, June, 1940, through June, 1942, and the comparison with the experience on routine annual Kline diagnostic tests in 1938.

Procedure

FROM April, 1938, to May, 1940, a routine Kline diagnostic test with finger blood was made at the time of the annual physical examination of each Home Office employee. In the next two years tests were made annually of those who had shown a reaction of + or more at any time, and biennially of the other employees. Since May, 1941, the Mazzini test has been made in addition to the Kline diagnostic test on each specimen.

The procedure, in general, was as follows. In the first year of routine testing, any individual reported as having a doubtful or positive reaction was given a second serologic examination within a month. Part of the second specimen was examined at the Home Office Laboratory and part of it was examined in a consultant's laboratory where Kline diagnostic and Kline exclusion tests were made. If the individual was considered to be possibly syphilitic, arrangements were made to send the employee to a consultant for examination, history-taking, and additional serologic investigation utilizing a battery of serodiagnostic tests. Cooperation was obtained from the patients by assuring them that their histories were considered "privileged communications"; that, should it be found that they had syphilis, their employment or opportunity for advancement would not be jeopardized in any way; that these special investigations including additional blood tests, cardiovascular examinations, spinal fluid examinations when indicated, and similar tests of other members of their families would be made at no cost to themselves; and that the Metropolitan Life Insurance Company desired that infected employees receive adequate care and treatment. Through this approach the consultant usually obtained all the data he requested. When a diagnosis of syphilis was made, the patient was advised and helped to get treatment, either with his private physician or clinic according to his economic circumstances.

Diagnosis

THE diagnosis was made by the consultant on the basis of results of the (1) various serologic tests, (2) history, (3) physical examination, (4) examination of the cardiovascular and central nervous systems, and (5) examination of other members of the family when feasible.

The terminology is as follows:

SYPHILIS: diagnosis was made (a) on the basis of a definite history of syphilis, or (b) when the physical examination revealed clinical evidence of the disease, or (c) when a diagnosis of syphilis had been made prior to routine serologic tests, and (d) the current serologic tests were positive for syphilis.

SEROLOGICALLY SPECIFIC:

(a) These individuals revealed no clinical evidence of syphilis after a thorough physical examination.

(b) The serologic reactions with the Kline and Mazzini tests were of a persistently high titre. Special verification procedures gave a positive reaction on those blood specimens which were subjected to this method; this is more in favor of being a syphilitic type of reaction.

(c) Serologic examinations of the mother and siblings were negative whenever it was feasible to examine their blood. This suggests the absence of asymptomatic prenatal syphilis.

NON-SPECIFIC:

(a) These individuals revealed no clinical evidence of syphilis after a thorough physical examination.

(b) There was no history of a syphilitic infection and, as a rule, no history of exposure.

(c) The blood specimens from these individuals gave a consistently low titre reaction (± to +++ reaction) on repeated serologic examination.

(d) Serologic examinations of the mother and siblings were negative whenever it was feasible to examine their blood. This suggests the absence of asymptomatic prenatal syphilis.

Some individuals with these unexplained doubtful and weakly positive serologic reactions were rechecked at intervals for three to six months. Some of them became serologically negative during this time, indicating that their serologic reactions were probably non-specific.

PROBABLY NEGATIVE: diagnosis made on individuals who showed a doubtful serologic reaction on one examination and who were negative on other serologic examinations.

Composition of Group Tested

THE number of employees tested (91% clerical, 9% non-clerical) in the two-year period was 15,082; 4,702 males, age 17 to 70; 10,380 females, age 17 to 65. The material was divided into five-year age groups. The age distribution was quite dissimilar: 30% of the males and 60% of the females were under age 30. In order to allow for this difference and make a valid comparison of the findings for the males and females, the incidence rates have been standardized to the age distribution of the whole group, and are referred to as the "standardized rate." Comparison of these rates with those of any other group should first take age distribution into account.

As noted above, employees who had had a doubtful or positive reaction to a previous routine Kline diagnostic test were tested serologically at each annual examination in this period. However, since this is a report on individuals, only the earlier doubtful or positive report in this period has been tallied.

Mazzini Tests

OF 15,082 employees tested, 240 (1.59%) had a positive or doubtful reaction to the Mazzini test. The number of cases by diagnosis and sex and the standardized incidence rates are shown in Table 1.

TABLE 1.
MAZZINI TEST POSITIVE OR DOUBTFUL

Diagnosis	Cases		Standardized Rates per 100	
	M	F	M	F
Total	102	138	1.62	1.40
Syphilis	55	23	.69	.28
Serologically specific	9	19	.13	.18
Non-specific	19	46	.34	.45
Probably negative	19	50	.46	.49

The incidence of syphilis was more than twice as high for the males (.69 per 100) as for the females (.28 per 100). For both sexes the incidence increased with age. Dividing the material into broad age classifications the rates were:

Males:		Females:	
Under age 30	.07%	Under age 30	.11%
age 30-49	.85	age 30-49	.25
age 50-70	4.44	age 50-65	1.43

Since the criteria for a diagnosis of syphilis are rigid and ultra-conservative, perhaps the true incidence of syphilis in these groups amounts to the sum of those diagnosed syphilis and serologically specific. This rate for the males, 0.82 per 100, is almost twice as high as for the females, 0.46 per 100.

The incidence of cases diagnosed serologically specific was practically the same for both sexes and at all quinquennial age groups. This was true also of the cases diagnosed non-specific and of those diagnosed probably negative.

Of the 240 cases having a positive or doubtful reaction to the Mazzini test, 78, or 32.5%, were diagnosed as syphilis. Mazzini has stated that only ++++ and +++ reactions should be considered positive. Of 114 persons with positive reactions (++++ or +++), 60% were proved syphilitic and 15% were considered serologically specific. On the other hand, of 126 persons with ++ or + reactions, 8% were proved syphilitic and 9% were considered serologically specific. (See Table 2.)

Of 78 persons with proved syphilis, 87% had ++++ or +++ reactions. Of 134 considered non-specific or probably negative, 22% had ++++ or +++ reactions on their first testing.

Thus, in our experience, the probability that a case will be proved syphilis increases as the titre of the Mazzini test increases. Among the male employees the chances of a Mazzini test proving syphilis are 9:1 with ++++ reaction, about even with +++ reaction, about 1:3 with ++ reaction, and rare with + reaction. Among the females the chances are about even with ++++ reaction, about 1:5 with +++ reaction, and rare with either ++ or + reaction.

Kline Diagnostic Tests

OF 15,082 employees tested, 403 (2.67%) had a positive or doubtful Kline reaction. Table 3 gives the number of cases and standardized rates by sex and diagnosis.

The incidence of syphilis was about twice as high among the males as among the females, and, as with the Mazzini test, the incidence increased with age. When the rates for syphilis and serologically specific are added, the incidence of probable syphilis among the males is 0.69 per 100; among the females 0.44 per 100.

The incidence of non-specific cases and probably negative cases was about four times as high among the females as among the males. When the material was divided into broad age classifications, it was found that among the males the highest incidence of non-specific cases and probably negative cases occurred at the ages 30-49; among the females, age did not affect the incidence of non-specific cases but the incidence of probably negative cases decreased markedly with increasing age.

Table 4 shows the diagnosis according to the titre of the Kline test.

TABLE 2.
DIAGNOSIS AND TITRE OF MAZZINI TEST

Diagnosis	Males					Females				
	Total	++++	+++	++	+	Total	++++	+++	++	+
Total	102	38	25	21	18	138	29	22	33	54
Syphilis	55	35	13	6	1	23	16	4	2	1
Serologically specific	9	2	3	3	1	19	7	5	5	2
Non-specific	19	1	7	9	2	46	3	10	15	18
Probably negative	19	..	2	3	14	50	3	3	11	33

TABLE 3.
KLINE DIAGNOSTIC TEST POSITIVE OR DOUBTFUL (BIENNIAL)

Diagnosis	Cases		Standardized Rate per 100	
	M	F	M	F
Total	81	322	1.29	2.94
Syphilis	45	23	.57	.28
Serologically specific	7	17	.12	.16
Non-specific	12	84	.19	.76
Probably negative	17	198	.41	1.74

TABLE 4.
DIAGNOSIS AND TITRE OF THE KLINE DIAGNOSTIC TEST (BIENNIAL)

Diagnosis	Males					Females				
	Total	++++	+++	++	+	Total	++++	+++	++	+
Total	81	16	11	30	24	322	12	42	104	164
Syphilis	45	15	7	12	11	23	4	6	10	3
Serologically specific	7	..	1	5	1	17	2	5	3	7
Non-specific	12	1	1	6	4	84	5	19	34	26
Probably negative	17	..	2	7	8	198	1	12	57	128

Of 403 cases having a positive or doubtful reaction by the Kline test, 68 or 17% were proved syphilis. Kline considers ++++ as positive, +++ or ++ as weakly positive, and + as doubtful.

Syphilis was proved in 67% of the cases with ++++ reactions, 19% with +++ or ++, and 7% with +. Of 68 cases of proved syphilis, 28% showed ++++ and 51% showed +++ or ++. Of 311 cases considered non-specific or probably negative, 2% showed ++++ and 44% +++ or ++.

The experience for males was very different from that for females. Of 81 males with a positive or doubtful reaction to the Kline test, 56% were proved syphilis as compared with 7% of the females. Of those with ++++ reactions, 94% of the males and 33% of the females were proved syphilis; of those with +++ or ++ the rates were 44% for the males and 11% for the females; of those with + titre, 47% for the males and 2% for the females.

Thus, in our experience among the males, the chances of a diagnostic Kline test proving syphilis are about 9:1 with ++++ reaction; a little better than even with +++ reaction; 2:5 with ++ reaction; and about even with + reaction. Among the females, the chances are 1:2 with ++++ reaction; 1:6 with +++; about 1:10 with ++ reaction; and rare with + reaction.

The females, especially with the Kline test, were more likely to develop non-specific high-titred serologic reactions. Even when the whole serologic picture suggested syphilis, it was more difficult to establish it clinically among the females than among the males.

TABLE 5.

TITRE BY KLINE TEST AND BY MAZZINI TEST ON SAME SPECIMEN OF FINGER BLOOD ACCORDING TO DIAGNOSIS AND SEX

Routine biennial tests (6/40-6/42)

		Males						Females					
			Mazzini titre						Mazzini titre				
		Total	++++	+++	++	+	neg	Total	++++	+++	++	+	neg
Proved Syphilis													
Kline titre	Total	55	35	13	6	1	—	25	16	4	2	1	2
	++++	15	15	—	—	—	—	4	4	—	—	—	—
	+++	7	6	1	—	—	—	6	3	1	—	—	2
	++	12	8	3	1	—	—	10	7	2	1	—	—
	+	11	5	2	3	1	—	3	2	—	1	—	—
	neg	10	1	7	2	—	—	2	—	1	—	1	—
Serologically specific (Syphilis not proved)													
Kline titre	Total	9	2	3	3	1	—	21	7	5	5	2	2
	++++	—	—	—	—	—	—	2	1	—	—	—	1
	+++	1	—	1	—	—	—	5	2	—	—	2	1
	++	5	1	2	1	1	—	3	1	2	—	—	—
	+	1	—	—	1	—	—	7	2	2	3	—	—
	neg	2	1	—	1	—	—	4	1	1	2	—	—
Non-specific													
Kline titre	Total	23	1	7	9	2	4	97	3	10	15	18	51
	++++	1	—	—	—	—	1	5	1	—	—	—	4
	+++	1	—	—	—	—	1	19	—	3	—	2	14
	++	6	—	2	2	—	2	34	—	2	5	4	23
	+	4	—	2	1	1	—	26	1	2	4	9	10
	neg	11	1	3	6	1	—	13	1	3	6	3	—
Probably negative													
Kline titre	Total	35	—	2	3	14	16	236	3	3	11	33	186
	++++	—	—	—	—	—	—	1	—	—	—	—	1
	+++	2	—	—	—	—	2	12	—	1	—	—	11
	++	7	—	1	—	—	6	57	1	—	1	1	54
	+	8	—	—	—	—	8	128	—	1	3	4	120
	neg	18	—	1	3	14	—	38	2	1	7	23	—

Comparison of Biennial Tests

IN THE period of study from June, 1940, to June, 1942, the Mazzini findings seemed to be more significant than the Kline findings. Table 5 shows the titres by the Kline test and by the Mazzini test for both sexes and for each diagnosis. For example, 55 cases of proved syphilis were found among the males. Of these, 15 had ++++ reactions by both the Mazzini test and the Kline test; six had ++++ by the Mazzini test and +++ by the Kline test; eight had ++++ by Mazzini and ++ by Kline; five had ++++ by Mazzini and + by Kline; and one had ++++ by Mazzini and was negative by Kline. Each pair of Mazzini and Kline tests was made on the same specimen of blood.

Among the males, 10 cases of syphilis were detected by the Mazzini test but were negative by the Kline test. However, the Mazzini test also gave a larger number of doubtful and positive reactions with the serums of individuals in whom syphilis was not proved; hence, the percentage of syphilis in the total group with positive or doubtful reactions was the same (55%) by both the Mazzini and Kline tests.

Among the females, the number of cases of syphilis detected was the same by both tests, but the number of non-specific and probably negative cases detected was over twice as great by the Kline test as by the Mazzini test. Cases of proved syphilis constituted 17% of those with a doubtful or positive reaction by the Mazzini test and 7% by the Kline test.

It is quite possible among both the males and the females that many classified as "non-specific" and "probably negative" may have had a latent syphilitic infection.

Comparison of Biennial Tests with Annual Test

TABLE 6 gives the incidence of positive or doubtful serologic findings by the annual Kline diagnostic test in 1938, the biennial Kline diagnostic and the biennial Mazzini test from June, 1940, to June, 1942, according to sex and diagnosis.

The tally was made as follows for the June, 1940, to June, 1942, period of testing. When the Kline diagnostic test showed a positive or doubtful reaction and the Mazzini test was negative, the case was credited as being detected by the Kline test and tallied under the appropriate diagnosis; conversely, when the Mazzini reaction was positive or doubtful and the Kline test was negative, the case was credited to the Mazzini test. If both the Kline test and Mazzini test showed doubtful or positive reactions, the case was credited to detection by each test. Thus, some cases are counted as being detected by each test and some by only one test.

The rates are based on the 6/40-6/42 population to make comparisons valid. Cases diagnosed serologically specific were included with the non-specific cases because in 1938 the serologically specific cases were considered non-specific.

For the males, the apparent differences in incidence of syphilis are not statistically significant; i.e., they are probably due to chance fluctuation. The incidence of non-specific cases by the Kline was greater in 1940-42 than in 1938 and was highest by the Mazzini test. Also, the incidence of probably negative cases by the Kline test was higher in 1940-1942, and the incidence by the Mazzini test was about the same as by the Kline diagnostic test made in the later period.

For the females, the incidence of syphilis was about the same at all three testings. The incidence by the Kline test of non-specific cases increased 2.6 times and of probably negative cases 3.5 times; the incidence

TABLE 6.
SEROLOGIC REACTIONS POSITIVE OR DOUBTFUL KLINE DIAGNOSTIC ANNUAL TEST 1938, KLINE DIAGNOSTIC AND MAZZINI BIENNIAL TESTS 6/40-6/42
by Diagnosis and Sex
Incidence per 100 Standardized to 6/40-6/42 Population

Diagnosis	Kline Diagnostic 1938 (Annual)	Kline Diagnostic 6/40—6/42 (Biennial)	Mazzini 6/40—6/42 (Biennial)
Males			
Syphilis	.68	.57	.69
Non-specific	.17	.31	.47
Probably negative	.20	.41	.46
Females			
Syphilis	.27	.28	.28
Non-specific	.36	.92	.63
Probably negative	.53	1.74	.49

by the Mazzini test was lower than by the biennial Kline test but significantly higher than by the earlier Kline test. The incidence of probably negative cases by the Mazzini was about the same as for the earlier period of Kline testing.

The percentage of cases of syphilis according to serologic reaction by the Kline diagnostic test did not differ materially for the males in the two periods. For the females, however, a marked change was noted. In the 1938 material 59.1% of the females with a reaction of ++++ or +++ were proved syphilitics as compared with 18.6% at the biennial examination; the percentages for ++ reactions were 27.2% and 9.6% respectively. The material was carefully scrutinized to ascertain a reason for these differences in the two periods of Kline tests, but no explanation can be offered from a statistical point of view.

The incidence of syphilis was in direct relation to the increase in titre by the Mazzini test.

Summary

ABOUT 15,000 employees of the Home Office of the Metropolitan Life Insurance Company were given a routine Kline diagnostic test in 1938 and a routine Kline diagnostic and Mazzini test in the two-year period 6/40-6/42.

The procedure and the diagnosing are explained.

The findings by the Kline diagnostic test in the two periods studied were not similar.

The incidence of syphilis among the males at all testings was higher than among the females.

The females were more likely to develop high non-specific titres and it was more difficult to establish a diagnosis of syphilis in females with serologically specific findings.

The incidence of low titre Kline diagnostic findings was relatively high among young females but decreased with age.

Observations on Absenteeism

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ABSENTEEISM because of illness will probably remain at a basis of some increase, depending on crowded housing conditions, closer contact with larger numbers of fellow employees and the general health of the community. Nutrition and other health education programs are being helpful to some extent. The common cold remains the No. 1 seasonal offender as a cause for lost time for illness, but it seems there is not a great deal that can be done about it.

Injuries, with new inexperienced workers and speeded production, are inevitable in spite of intensified safety programs and careful job instruction.

The industrial physician provides treatment for injuries, but he also has another important function. He should see to it that the able worker returns promptly to his job and that the disabled man goes home or is hospitalized. His approach to his patient has an important bearing on the thinking of the worker with respect to what he should do. Proper handling frequently will put a man on his regular job who wanted to use a minor injury as an excuse to loaf, and likewise send one home happy when he did not want to lose time because of a more serious condition.

The practice of some companies of sending injured workers to created jobs in order to maintain a low lost time accident record is not economically sound and very poor industrial relations. I seriously doubt the advisability of this practice, for frequently the regular job is at a higher rate than the created one and complete recovery is retarded by keeping the injured employee on the job.

One cannot deny that willful absence from work is a real problem in some industries in spite of the fact that all real Americans are happy to support the war effort. Increased earnings, increased employment in the family group and the long work week in some plants are factors in causing the worker to take a day off occasionally, thoughtlessly not realizing what his absence means to the production line. Another incentive has been the fact that in some companies liberal payments for sickness and accident absence, plus employee benefit association benefits, plus outside insurance in some cases, enable the worker to have a greater income off the job than while working. The sociological and humanitarian motives which have prompted industry to provide such security for employees are indeed commendable, but such a policy does seem to affect prolonged absenteeism, especially when the waiting period before payments are started is relatively short.

Absence without leave is being lessened in some industries merely by exercising a more careful check on lost time for causes other than illness or injury.

As the manpower situation becomes more acute we shall hear a great deal about the employment of more women in industry. Experience in England and in this country has shown that they can perform surprisingly well in many jobs formerly considered suitable only for men. And these women are doing these jobs day after day without in any way affecting their health, provided suitable working conditions exist.

Another subject receiving serious consideration is the employment of the physically handicapped and the older worker. It requires no special study to see that, as the labor pool is skimmed deeper, physical standards of the group of workers have changed materially. Many extremely poor employment risks and accident prone individuals daily frequent employment offices and are being hired. Medical departments are continuously revising their physical standards for employment downward. The pre-employment physical examination is becoming more and more—and rightly so—not a means of rejection for employment but a basis upon which the industrial physician may exercise one of his more important functions in the plan of job placement.

I believe a sound policy in answer to the question "whom will industry employ?" should be that we will employ all available workers, including women, the older workers, the physically handicapped, when we have a job which they can perform efficiently without danger to their health.

From a presentation by DR. EARNHEART at the American College of Surgeons' War Session, Omaha, Nebraska, April 3.

Placement of the Cardiac in Industry

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WITH the present urgent call for manpower in defense work there has never been a greater opportunity for the placement in industry of handicapped individuals. By the same token there has never been a greater responsibility thrust upon industrial physicians to insure proper placement of these persons and a follow-up of their physical defects.

Our aging population and the large number of workers over 40 now being employed help to make cardiovascular disease one of the major problems among the handicapped. Thus far in the Selective Service examinations of draftees about 10% have been rejected because of cardiovascular disease. Probably the majority of these young men would qualify physically for positions in industry. Sawyer[1] has emphasized the fact that the physical requirements for industrial workers are considerably less stringent than those for the armed forces.

The disposition of these rejectees presents some problems of rehabilitation. If the war goes on long enough a portion of the group undoubtedly will be reclassified for types of service outside the combat zone. Those who already are skilled workers probably will return to their former occupations or elsewhere be absorbed by industry. Others will require training for jobs suited to their functional and therapeutic classification.

Vocational Guidance

PLACEMENT is a sequel to vocational guidance and it is desirable at this point to discuss the importance of directing young people with heart disease into suitable occupations.

Much has already been done in this direction, as witness the intensive study over a 10-year period by your Cardiac Vocational Guidance Committee, as reported by Margaret Brown[2] in the pamphlet "The Effect of School and Industry on Young People with Heart Disease."

There is still need for vocational counselors in high schools to acquire a more intimate knowledge of job requirements in industry—particularly physical requirements. In advising a student with heart disease to undertake training for a certain occupation, the counselor should be informed not only of the functional and therapeutic classification of the heart but also of the presence of any other physical defects which might prove obstacles to successful placements. Serious visual errors, for example, are often overlooked. Briefly, then, a complete preliminary physical examination geared to the demands of industry is necessary before training is begun.

In Rochester last year the local branch of the National Vocational Guidance Association devoted one of its meetings to a discussion of the "Physical and Mental Requirements of Industry."

The kinds of work suitable for heart patients and employment possibilities for them have been clearly set forth by Stroud.[3] He emphasizes the need to impress physicians with their responsibility toward the handicapped, and urges the profession to utilize the services of trained placement workers and state and county rehabilitation bureaus.

We would suggest that medical schools stress the importance of rehabilitation and placement of the disabled in courses on industrial medicine.

At this point it may be of interest to show you a chart giving the relationship of the various Rochester agencies for the vocational guidance and rehabilitation of the cardiac (Chart I.).

Criteria for Employment

DURING the past two years those of us engaged in industrial practice have been conscious of increasing pressure to relax the standards of physical fitness required in the pre-employment examination.

The War Manpower Commission is urging employers to accept larger numbers of handicapped people who, it is said, will form the back-log of war industries when our armed forces are brought up to desired strength.

The National Conference on Employment of the Disabled held last fall in Washington had much to say

Presented at the Scientific Session, New York Heart Association, New York Academy of Medicine, December, 1942.

EXISTING AGENCIES IN ROCHESTER

FOR VOCATIONAL GUIDANCE AND REHABILITATION OF THE CARDIAC

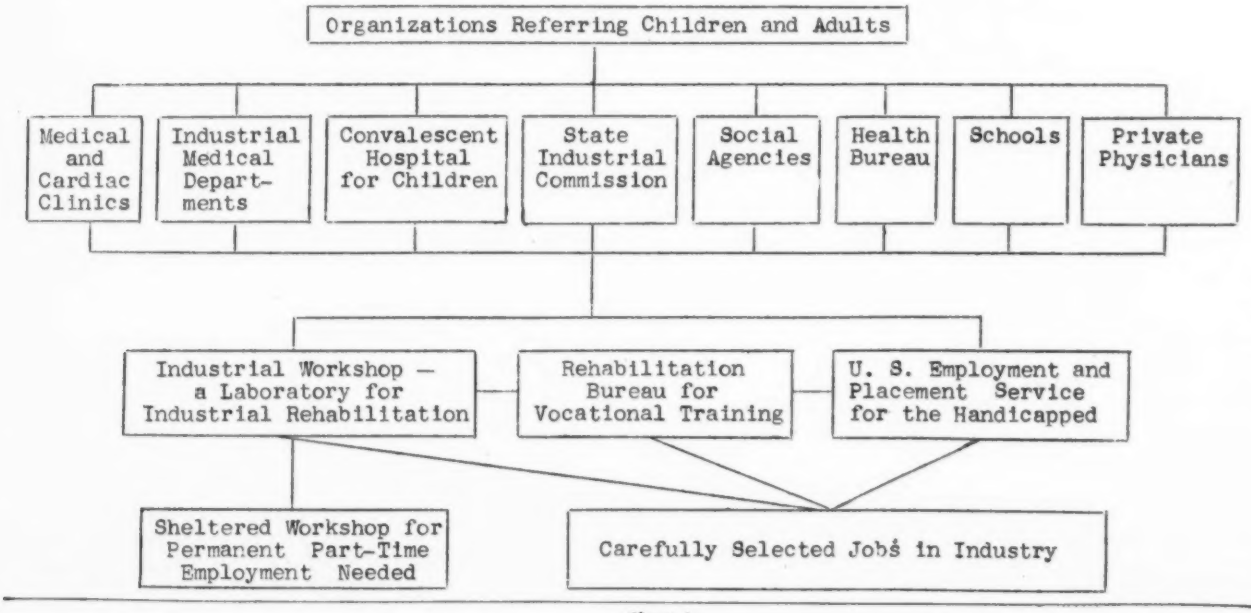
Organizations Referring Children and Adults
Medical and Cardiac Clinics
Industrial Medical Depart-ments
Convalescent Hospital for Children
State Industrial Commission
Social Agencies
Health Bureau
Schools
Private Physicians
Industrial Workshop — a Laboratory for Industrial Rehabilitation
Rehabilitation Bureau for Vocational Training
U. S. Employment and Placement Service for the Handicapped
Sheltered Workshop for Permanent Part-Time Employment Needed
Carefully Selected Jobs in Industry

Chart I.

about the too rigid character of the physical examination in industry which defeated the placement of skilled applicants needed in the war effort.

It seems to me that, as industrial physicians, we should meet these demands realistically.

The following criteria for employment of persons with cardiovascular disease in the Eastman Kodak Company were adopted by Missal[5] and myself in 1930 and revised in 1934 (Chart II). Up until the present war program started these criteria have been followed quite consistently with very few resulting failures after placement. Now we are making many exceptions, particularly when the employment department stresses the need of a worker.

Practically all cases of rheumatic heart disease without signs of failure are accepted. Hypertensives with systolic pressures up to 200 and diastolic pressure up to 120 are passed providing there is no evidence of renal damage. An effort is made to take ophthalmoscopic examinations of as many of this group as possible.

We are accepting persons with coronary artery disease as occasion demands. With the large number of applicants in the fourth, fifth, and sixth decades we will undoubtedly accept some cases of coronary artery disease unrecognized at the time of the examination. We are endeavoring to take electrocardiograms of these older applicants when feasible.

Studies by Master and Dack[6] and Bland and White,[7] have shown that a considerable number of persons who have had coronary thrombosis are able to return to their former occupation or some modification of it. Other studies by Master and Dack[8] on workers 40 years of age or over have pointed to the possibility that hypertension is part of the normal aging process in this group and should not alone, unless marked, be a cause for rejection for employment.

Our experience of continuing in employment persons with cardiovascular disease has been favorable. In support of this statement I should like to offer some tables of a study of heart disease among Kodak employees made by Missal[9] and myself in 1937. (See Tables 1 to 6.)

One of the principal results of this study was the demonstration that employees with limited cardiac reserve (formerly Classes IIa and IIb, now Classes II and III) could be continued in employment for relatively long periods.

We regret that there has not been time to prepare other tables bringing this survey up-to-date. However, with five years' additional experience our conviction grows that persons with well advanced cardiovascular disease may, without great risk, be allowed to work in selected jobs under careful medical supervision.

Medicolegal Aspects

IN THE past 20 years there has been but one case where a death claim has been filed against the com-

CHART II.
CRITERIA FOR REJECTION AND ACCEPTANCE OF CARDIOVASCULAR CASES FOR EMPLOYMENT
(Revised as of June 1, 1934)

I. *Reject*

A. History:
1. Applicants with history of syphilis (postpone rating for result of Wassermann taken by examiner and re-check physical findings).
2. History of recent hyperthyroidism.
3. Recent carditis or acute infectious diseases apt to involve the heart; rheumatic fever within three years, tonsillitis (recent recurrent attacks).
4. History of cardiac failure, recent or past.

B. Physical Examination (To be made in every case in spite of history):
1. Signs of decompensation.
2. Foci of infection; tonsils and teeth (more than three teeth) not removed.
3. Case with aortic lesions.
4. Congenital heart disease.
5. Arteriosclerotic heart disease.
6. Hypertensive heart disease or essential hypertension with persistent systolic blood pressure of 150 or more, or diastolic pressure over 100, in adults up to 40 years of age after complete horizontal rest for 10 minutes.
7. Hypotension systolic pressure of 100 or less after complete horizontal rest for 10 minutes.
8. Cases with positive Wassermann or other stigmata of syphilis.
In passing upon a cardiac risk the applicant's age, nervous stability, general physical condition, probability of cooperation, and suitability for job specified, are to be given careful consideration.
9. Arrhythmias:
a) In the presence of signs or symptoms of organic heart disease — further study required — patient must have electro-cardiogram and a six-foot plate of heart.
b) Auricular fibrillation.
c) Paroxysmal tachycardia.
d) Pulsus alternans.

II. *Accept*

A. Cases of rheumatic heart disease (inactive) or cases of heart disease with etiology unknown. Cases showing mitral insufficiency of stenosis or simple hypertrophy, with good compensation and without much enlargment, with no signs of aortic lesions, are acceptable. However, each case should receive individual study and be classified accordingly.
These are accepted if:
1. No history of recent or recurrent sore throat.
2. No history of decompensation.
3. No history of rheumatic fever within three years.

B. Hypertensive heart disease or essential hypertension (without signs of renal involvement). Moderate degree cardiac enlargement and blood pressure not over limit specified under Reject B6.

C. Arrhythmias:
May pass cases with simple premature contractions or extra systoles not associated with organic heart disease.

D. Simple tachycardia:
In absence of endocrine dyscrasia or absence of organic heart lesion. No fixed pulse rate specified, but due regard to be given to the individual's general health, and nervous balance, and effect of horizontal rest for 15 minutes upon rate.

All applicants giving evidence of heart or circulatory disorders should have routine blood pressure readings, urine examination, blood Wassermann and, if possible, a six-foot plate of heart at the time of initial examination.

All cases of heart disease accepted for employment are placed in Class III and cross-indexed for follow-up at regular intervals. Criteria for diagnosis are those recommended by the American Heart Association.

Applicants, after removal of possible foci of infection such as carious teeth and diseased tonsils, may be reconsidered.

Blood pressure readings are often repeated and telephone conversations held with the family physician in an endeavor to arrive at a closer approximation of the applicant's blood pressure. Hypotension, per se, is not regarded too seriously, particularly in women.

TABLE 1.
ANALYSIS OF 278 CASES OF HEART DISEASE

Etiologic Class	Health Record: Good	Fair	Poor	Total	Percentage
Coronary artery disease	95	58	16	169	61
Rheumatic and unknown (rheumatic)	54	7	5	66	24
Hypertensive disease and essential hypertension	20	9	5	34	12
Miscellaneous	5	2	2	9	3
Total	174	76	28	278	100

Present status	Functional Group: I	IIa	IIa-IIb	IIb	Total	Percentage
Working	76	62	3	4	145	52
Left	35	6	0	..	41	15
Total	145	107	18	8	278	100
Retired	20	17	3	1	41	15
Died	14	22	12	3	51	18

Working period	IIa	IIa-IIb	IIb	Total
None	11	6	6	23
6 months or less	14	2	1	17
6 months-1 year	18	1	..	19
1-2 years	18	2	..	20
2-3 years	11	1	..	12
3-5 years	16	3	1	20
Over 5 years	19	3	..	22
Total	107	18	8	133

pany for aggravation of existing heart disease because of undue physical exertion or accident. In this case, reported by the writer,[10] the employee, a man of 37, suffered a moderate back strain. He was later discovered to have a positive Wassermann and aortic insufficiency. Despite the fact that at autopsy the diagnosis of syphilitis heart disease was confirmed, the company was obliged to pay the death benefit.

Stiles[11] and the writer reviewed the histories of 100 employees dying from coronary thrombosis in the period 1921-1940. In 12 cases symptoms were said to have begun while the employee was at work. In only one case was there any question about possible aggravation by work activity.

Master[12] and Willius[13] contend that effort is not responsible for coronary thrombosis. However, with many opinions to the contrary, we have been careful to place employees who have had coronary thrombosis on jobs not requiring strenuous activity. With those having the anginal syndrome this is especially important.

Behneman[14] in answering the question "Should Coronary Disease and Hypertension Be a Cause for Rejection In Industry?" makes a number of constructive suggestions which should reduce possible compensation costs to the employer accepting these groups. However, his recommendation that the applicant be allowed to sign a waiver to protect the employer raises a controversial issue which can only be touched upon here.

E. P. Chester,[15] State Supervisor of Vocational Rehabilitation in Connecticut, states that only about 1% of the waivers in that state cover cardiac conditions. It is his opinion that the waiver privilege has not been abused.

He points out that a good pre-employment medical report covering a worker's disabilities is probably as valid as a waiver in cases where a question of compensation arises.

Our practice, after making sure of the suitability of the job to be filled, is to explain to an applicant, in a manner not to cause alarm, the nature of his cardiovascular condition and, when necessary, caution him against undue activity in or out of the plant. Thus his cooperation is secured.

TABLE 2.
CORONARY ARTERY DISEASE

A. Analysis of 169 Cases
Functional Classification

Present status	I	IIa	IIa-IIb	IIb	Total	Percentage
Working	39	53	2	4	98	58
Left	3	1	..	..	4	2
Retired	14	11	3	1	29	17
Died	8	18	10	2	38	23
Total	64	83	15	7	169	100
Percentage	38	49	9	4	100	

Working period	IIa	IIa-IIb	IIb	Total
None	7	4	5	16
6 months or less	12	2	1	15
6 months-1 year	12	1	..	13
1-2 years	16	2	..	18
2-3 years	8	1	..	9
3-5 years	13	3	1	17
5-10 years	12	2	..	14
Over 10 years	3	..	..	3
Total	83	15	7	105

B. Age and Length of Service

Length of Service	Age, Years: Less Than 49	50-59	60-69	70 and Over	Total
Under 1 year	1	..	..	..	1
1- 3 years	1	..	..	..	1
4- 6 years	1	..	..	..	1
7- 9 years	1	4	2	..	7
10-15 years	4	10	14	4	32
16-19 years	6	11	8	..	25
20-24 years	5	19	14	2	40
25-29 years	1	5	7	2	15
30-34 years	..	11	9	4	24
35-39 years	..	6	8	1	15
40-44 years	..	..	2	2	4
45 years and over	..	1	2	1	4
Total	20	67	66	16	169

TABLE 3.
ANALYSIS OF 54 CASES OF CORONARY THROMBOSIS

(Fifty-one Men; Three Women)

Present status		Health record	
Working	33	Good	28
Left	1	Fair	17
Died	15	Poor	7
Retired	5	Unknown	2
Working period—IIa and IIb		**Age, years**	
None	13	Under 40	1
6 months or less	5	40-49	12
6 months-1 year	4	50-59	20
1-2 years	7	60-69	19
2-3 years	7	70 and over	1
3-5 years	9	Unknown	1
5-10 years	9		

TABLE 4.
HYPERTENSIVE HEART DISEASE AND ESSENTIAL HYPERTENSION

A. Analysis of 34 Cases
Functional Classification

Present status	I	IIa	IIa-IIb	IIb	Total
Working	13	2	..	..	15
Left	4	1	..	..	5
Retired	2	4	..	..	6
Died	5	3	..	..	8
Total	24	10	0	0	34

Working period	IIa
None	4
6 months or less	1
6 months-1 year	2
1-2 years	..
2-3 years	2
3-5 years	1
Total	10

B. Age and Length of Service

Length of Service	Age, Years: 30-39	30-49	50-59	60-69	70	Total
Under 1 year	..	..	..	..	..	..
1- 3 years	..	..	..	..	..	..
4- 6 years	..	..	1	1	..	2
7- 9 years	..	..	1	..	..	1
10-14 years	..	..	..	5	..	5
15-19 years	2	2	4	3	..	11
20-24 years	..	1	2	..	..	3
25-29 years	..	1	1	3	2	7
30-39 years	..	1	1	2	..	4
40 years and over	..	..	1	..	..	1
Total	2	5	11	14	2	34

TABLE 5.
RHEUMATIC HEART DISEASE AND HEART DISEASE OF UNKNOWN (RHEUMATIC) ORIGIN

A. Analysis of Sixty-Six Cases (Twenty-Nine Men; Thirty-Seven Women)

Present status	Functional Classification I	IIa	IIa-IIb	IIb	Total
Working	23	5	1	..	29
Left	27	4	..	..	31
Retired	2	2	..	..	4
Died	..	..	1	1	2
Total	52	11	2	1	66

Working period	IIa	IIa-IIb	IIb	Total
None	..	1	1	2
6 months or less	1	..	..	1
6 months-1 year	3	..	..	3
1-2 years	2	..	..	2
2-3 years	1	..	..	1
3-5 years	1	..	..	1
Over 5 years	3	1	..	4
Total	11	2	1	14

B. Age and Length of Service

Length of Service	Age, Years Under 19	20-29	30-39	40-49	50-59	60 and Over	Total
Under 1 year	1	7	3	..	..	..	11
1- 3 years	1	10	2	2	..	..	15
4- 6 years	..	3	2	..	3	..	8
7- 9 years	..	1	2	..	..	..	3
10-15 years	..	2	6	4	1	..	13
16-19 years	..	..	2	4	3	2	11
20-24 years	..	..	..	1	..	..	1
25-29 years	..	..	..	2	..	..	2
30-34 years	..	..	..	..	1	..	1
35-39 years	..	..	..	..	..	1	1
Total	2	23	17	13	8	3	66

TABLE 6.
MISCELLANEOUS HEART DISEASE

Etiologic Classification	Present Status	Age Group	Functional Classification	Duration of Service, Years	Health Record	Working Period if IIa-IIb
Syphilitic	Died	50-59	IIa-IIb	7- 9	Good	3 months
Syphilitic	Retired	60-69	I	30-35	Poor	
Syphilitic	Died	60-69	IIa-IIb	40-44	Fair	2½ years
Syphilitic	Died	50-59	IIb	16-19	Good	4 years
Thyroid	Working	50-59	IIa	25-29	Good	8 years
Thyroid	Working	60-69	IIa	20-24	Good	8 years
Unknown (emphysema)	Left	40-49	I	16-19	Fair	
Unknown (paroxysmal tachycardia)	Retired	40-49	I	30-34	Poor	
Unknown (rheumatic or congenital)	Working	20-29	I	7- 9	Good	

Summary and Conclusions

THE placement of persons with cardiovascular disease in industry is a problem of prime importance which concerns both old and new employees.

2. Vocational counselors and placement workers should have knowledge of the functional and therapeutic classification of heart disease and job requirements in industry. A general physical examination for the purpose of discovering and correcting other physical impairments is advisable before training is begun or placement attempted.

3. The urgent demand for more workers in the defense program makes necessary the revision of existing criteria for the employment of persons with cardiovascular disease.

4. Evidence has been given that with careful placement and medical supervision persons in this group can be continued in employment without great risk.

This experience should encourage the hiring of individuals in the same category as *new* employees.

References

1. SAWYER, W. A.: "Prehabilitation and Rehabilitation in Industry." *J.A.M.A.*, 119: 5, May 30, 1942.
2. BROWN, MARGARET: "The Effect of School and Industry on Young People with Heart Disease." New York Tuberculosis Health Association, 244 Madison Avenue, New York, December, 1930.
3. STROUD, W. D.: "The Rehabilitation and Placement in Industry of Those Handicapped with Cardiovascular Disease." *J.A.M.A.*, 105: 18, November 2, 1935.
4. Proceedings National Conference on Employment of the Disabled, November, 1941. Published by National Rehabilitation Association, Washington, D.C.
5. CRAIN, R. B., and MISSAL, M. E.: "The Employee with Heart Disease: His Management in Industry." *J.A.M.A.*, 110: 1, January 1, 1938.
6. MASTER, A. M., and DACK, S.: "Rehabilitation Following Acute Coronary Artery Occlusions." *J.A.M.A.*, 115: 10, September 7, 1940.
7. BLAND, E. F., and WHITE, P. D.: "Coronary Thrombosis (with Myocardial Infarction) Ten Years Later." *J.A.M.A.*, 117: 14, October 14, 1941.
8. MASTER, A. M., and DACK, S.: "Hypertension in Workers over Forty Years' of Age." *Industrial Medicine*, 11: 4, April, 1942.
9. *Op. cit.* "The Employee with Heart Disease: His Management in Industry."
10. CRAIN, R. B.: "Syphilitic Aortitis and Aortic Insufficiency Aggravated by Back Strain and Terminating in Death—Case Report." *Industrial Doctor* (now consolidated with *Industrial Medicine*) Vol. 10, January, 1932.
11. CRAIN, R. B., and STILES, W. W.: Unpublished Data.
12. MASTER, A. M.: "Coronary Artery Thrombosis." *Industrial Medicine*, 6: 307, May, 1937.
13. WILLIUS, F. A.: "Certain Medicolegal Aspects of Coronary Thrombosis." *Proceedings of the Staff Meetings of the Mayo Clinic*, 17: 33, October 7, 1942.
14. BEHNEMAN, H. M. F.: "Should Coronary Disease and Hypertension be a Cause for Rejection in Industry?" *J.A.M.A.*, 116: 3, January 18, 1941.
15. CHESTER, E. P.: Personal Communication.

Industrial Epididymitis

—and Epididymo-Orchitis—

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INDUSTRIAL epididymitis and epididymo-orchitis is not a well known or generally accepted clinical entity. Crane[1] reports but three cases of traumatic epididymo-orchitis from a series of 100 cases of alleged trauma to the testes. These cases, however, are true traumatic entities, characterized by pain, shock, ecchymosis and subsequent testicular atrophy. Industrial or strain epididymitis is not the result of a traumatic incident. It follows some physical strain or lifting effort without the application of direct trauma to the scrotum or its contents. Slotkin[2] reports a series of 33 cases of the industrial variety observed over a five-year period. Undoubtedly the paucity of reports on the subject comes about as a result of first, a failure on the part of many workmen to seek medical advice because of the venereal stigma unjustly associated with every affliction of the genitalia. Secondly, when such aid is solicited, some of these men are deterred from seeking compensation because in many instances the examining physician is not fully aware of what he is dealing with and in some instances is as guilty as many of his patients in supposing that it is venereal in origin and not causally related to their employment. In some instances a diagnosis of inguinal strain, nonspecific epididymitis, or neuralgia of the cord is attached to the complaint and because the disability is so short and not productive of permanency, the entire matter is passed off and soon forgotten.

Report of Cases

DURING the past 18 months at the Blanchard Industrial Clinic we have had the opportunity of observing 14 cases of industrial epididymo-orchitis and an additional two cases which clinically were classified as such but in which the histories obtained were not sufficiently clear to attribute the disability to the claimants' employment. There were in addition two cases of direct trauma to the scrotum, which cases are not included in this series. The stated ages of these patients were grouped as follows: one age 18 and one age 66 years. These represented the extremes. Three cases were in the twenties, five in the thirties and six in the forties. One patient of the series was colored and the remainder white. With but five exceptions disability was less than 10 days and usually less than seven. The longest period of disability was six weeks.

Generally speaking the men engaged in heavy industries, i.e., foundries, are most prone to develop this type of complaint. A few cases in our series attributed their disability to slipping on a greasy floor and catching their heel in a stair tread. The history obtained essentially is as follows: "I was lifting or pushing some object of weight and I felt pain in my side." The patients are usually quite reticent about indicating the scrotum as the source of their discomfort until they are undressed and the obvious swelling noted. One then learns that the act of straining was almost immediately followed by pain lateralized to one side of the scrotum but occasionally radiating as high as the groin. After a brief period the patient will return to his work and within a few hours the contents of that half of the scrotum will become enlarged, painful, hot and indurated. At this point I would like to stress a fact elicited on inquiry which I feel is quite significant. Many of these patients admitted that they had a full bladder at the time of the alleged accident. Further observations in this group revealed that but with one exception a venereal past history was denied. There were no complaints of frequency or dysuria, and at no time did any of these patients present any constitutional complaints. Urethral discharges were absent in all cases, and urine examinations when done, revealed only an occasional pus cell.

Disability is short, usually less than seven days, but for some time after apparent recovery the patient will state that he cannot assume a squatting position without discomfort. When examinations are made even several months after the termination of the disability, the cord on the affected side seems thickened all the way to the external ring, and there is usually a hard, marble-size mass at the most dependent portion of the epididymis.

No patient in this series presented any evidence of suppuration, and consequently all recovered without surgical intervention of any type.

The treatment in these cases consisted of the wearing of a suspensory and the use of 10% intravenous calcium gluconate, 10 cc. every other day, if the patient could be encouraged to return that often for treatment. With regard to the use of intravenous calcium, it is well to remember that it should always be given very slowly with the patient reclining on a treatment table. The too rapid injection of this material is followed by a most uncomfortable sensation of heat, and some patients have suggested that they almost would rather have the steady even discomfort of the epididymitis rather than the acute discomfort of more hurried treatment.

Mechanism

THE mechanism by which the above clinical picture is produced has variously been described. Slotkin[2] feels that the epididymitis and epididymo-orchitis is preceded by a non-specific vesiculitis and prostatitis, and that there is also a co-existent edema of the ejaculatory ducts, so that at the moment of violent strain the contraction of the perineal muscles will force the infected material down the vas because it cannot obtain egress into the posterior urethra past the edematous orifices of the ejaculatory ducts. There are others who look upon the entire picture as being unrelated to any strain, and feel that the epididymitis actually pre-existed the alleged accident and that the latter was merely a coincidental occurrence. They would assume that the pathology present was part of a corresponding prostatitis and vesiculitis. One cannot help, however, but be impressed by the definite history of accident obtained in these cases just as one is impressed by the history obtained following the development of an acute traumatic hernia. Wilhelm[3] has shown that there is a steady propulsion of the contents of the vas and seminal vesicles out into the posterior urethra. This certainly would argue against the collection of any infected detritus from the vesicles in the dependent lumen of the epididymis. Further, Kreutzman[4] described experiments in which a group of males with chronically infected prostates, but with negative urines, were rendered sterile by sectioning the vas. At the time of operation a small section of each vas was removed and bacterial cultures made. Thereafter in each instance subsequent inspection revealed the absence of any bacterial growths. This, then, would contradict the concept that infection, predicated upon a chronic upper tract focus, would lie dormant in the vas and then make its appearance irrespective of the occurrence of an accident. Infection carried to the epididymis via the blood stream or the regional lymphatics would not, I feel, be a factor in the production of an industrial epididymitis.

As a physician whose interests lie solely in the field of industrial medicine and surgery and not in urology, I would like to suggest that the concept of infection alone, as the important factor in the production of an industrial epididymitis, does not seem to be entirely satisfactory. Why then should the clinical picture be so explosive and dramatic in its onset? Elsewhere in the body infection requires at least a modest incubation period before it will manifest itself by local signs. Further, if infection were so immediate in its effects we should suspect a very fulminating type of process requiring heroic treatment, surgery, and probably late destructive complications. The actual facts are that surgery has no place in the treatment of this disability, and that it is very benign in its course, resolving after a short period of time without permanency. Finally, the absence of any constitutional reaction does not, I think, support the theory of infection.

I would like to suggest that the clinical picture could be explained as the irritant response of the vas and testes to the mechanical propulsion of urine, infected or otherwise, retrograde down the cord. Anatomical considerations[5] suggest these possibilities. The prostatic or posterior urethra is the widest and most dilatable portion of the urethral canal. Its proximal end is closed by the bladder sphincter and its distal end by the external sphincter comprising the membranous urethra and its sphincter muscle. This latter segment is the narrowest and most rigid portion of the urethra. At the moment of strain, urine may be forced from the bladder past the internal sphincter and out into the posterior urethra. Its further progress is halted by the tight external sphincter. This is more likely to happen when the bladder is full than when it is empty. The prostatic urethra, now continuous with the bladder, dilates to take up the stress and some of the urine is forced by the orifices of the ejaculatory ducts and down the epididymis. Kreutzman[4] has shown that under certain conditions a reflux of urine from the posterior urethra into the vas, comparable to the reflux from bladder to ureter, can occur.

I think it is noteworthy that in our series all but one of the patients were of an age in which little if any encroachment of the posterior urethra by prostatic hypertrophy would be expected; then, too, one would assume that in the absence of obstruction the urines of these patients would be relatively sterile. One final point of questionable significance was the tendency to left-sided lateralization. This probably has some anatomical explanation. In this series 11 cases presented left-sided involvement as opposed to five with involvement of the contents of the right half of the scrotum. There was no instance of bilateral involvement.

Summary

CLINICALLY circumstantial evidence and a series report are presented to suggest that infection as the important factor in the production of an industrial epididymitis and epididymo-orchitis is not sufficient to explain the clinical picture as it is known to occur.

A chemico-mechanical theory as an alternate suggestion is presented.

Bibliography

1. CRANE: *J. Urology*, 34:477-479, 1935.
2. Slotkin: *New York State J. Medicine*, 39:1096-1101, 1939.
3. WILHELM: *J. Urology*, 39:123-127, 1938.
4. KREUTZMAN: *J. Urology*, 39:123-127, 1938.
5. Gray's Anatomy, 22nd Ed., pp. 1227-1228.

Tripoli and Silicosis

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A FEW indubitable cases of silicosis following exposure solely to tripoli have occurred in recent years. A considerably larger number has been attributed to tripoli, but the supporting evidence is unsubstantial.[1] Although tripoli contains a percentage of free silica usually in excess of 98, and in industry frequently exists in highly fine particulate size, the incidence of silicosis among tripoli workers long has proved to be low and almost non-existent.[2, 3, 4] Notwithstanding this clinical situation, experimental tissue proliferation characteristic of silica action may be induced with facility by tripoli. Because of recent stigmatization of tripoli, it has become desirable better to determine the extent of the silicosis hazard from this mineral. Such is the purpose of this report.

Tripoli

TRIPOLI is the term widely applied to a group of comparatively soft, highly porous, friable, microcrystalline forms of sedimentary silica. Their chemical constituency is closely similar, but physical properties may vary to a marked degree. With few exceptions, the content of free silica lies above 98%. In the exceptions, the content is not known to fall below 93%. Whether these natural minerals shall be designated as crypto-crystalline quartz, chalcedony, or novaculite, is partly a matter of definition.

Tripoli's x-ray diffraction pattern is that of quartz.[5] Tripoli is not the same substance as diatomaceous earth and should not be confused with it. The presence of diatoms is essential to diatomaceous earth. None is present. "Tripolite" or "diatomite," rather than tripoli, properly designates diatomaceous earth, which contains only about 89% free silica. "Kieselguhr" and "infusorial earth" are not tripolis.

The origin of tripoli is in dispute, there being at least three theories as to its beginning, namely: (a) that it represents the decomposition of chert; (b) that it is the residuum of highly siliceous limestone, the latter having been leached away, and (c) that tripolis were laid down in essentially their present form as a flocculent, colloidal silica.[6] It is current geologic belief that no one of these theories accounts for the formation of all so-called tripolis, and that more than one origin, together with different degrees of pressure, have determined the physical variations encountered.

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TABLE I.[6]

Constituent	Composition, Per Cent					
	Illinois	Arkansas	West Tenn. Valley	East Tenn. Georgia	Missouri Oklahoma "Cream"	"Rose"
SiO_2	99.44	99.72	98.92	93 to 98	97.70	98.00
Al_2O_3	0.22	0.067	0.46	1.0 —1.4	0.838	0.19
Fe_2O_3	0.14	0.003	0.07	0.22—1.6	0.282	0.73
CaO	....	0.090	0.37	Tr-0.30	0.001	Tr
MgO	....	0.001	....	Tr-0.20	0.014	Tr
Na_2O-K_2O	....	....	....	....	0.148	0.29
TiO_2	....	....	....	Tr-0.20	0.059	....
MnO	....	....	....	....	0.002	....
H_2O (clay)	....	....	....	....	0.099	....
Ignition	0.25	0.120	....	0.3-9.7	0.501	0.50

Analyses of various formations of tripoli are now shown in Table I.

The minerals associated in small quantities with silica, making up the totality of tripoli, may not be regarded as impurities since they impart physical qualities leading to special types of this mineral. These minor constituents foremostly are not interstitial but represent surface coatings or canaliculi fillings.

Other Physical Properties

TWO characteristics seem essential to the inclusion of any substance within the group of tripolis, namely porosity and crypto-crystallization. As to the former, all tripoli is highly canaliculated with the result that a pound of this material finely ground, probably exhibits as a minimum 6,000 square feet of surface area. In addition, some spaces are "air locked." As a result, silica in the form of tripoli, has the greatest volume of all silicas per unit of weight. Not all tripolis are equally porous, and particularly this is true of the colored varieties. A cube of natural cream tripoli in the presence of water will take up 50% of its weight in one minute's time, but a similar cube of rose tripoli may not reach this state until one hour has elapsed. The specific gravity of tripoli as a mass is on a parity with water, but individual crystals may show a specific gravity as high as quartz, that is, on the order of 2.65. This porosity early gave rise to cant names of "cotton stone" and "rotten stone." The counterpart of "porosity" in tripoli is "fibrosity," which attribute is often associated with this mineral.

Tripoli was first discovered in 1869 in the Seneca, Missouri, district and the term "tripoli" first appeared in 1871 in connection with this same stone. By some it is contended that this term exclusively should be applied to the Seneca district properties and that "soft silica" should be applied to all other formations since they are physically different, this term being in distinction to "hard silica," as represented by ground quartz. This situation is further confused by the fact that for some compilation purposes "rotten stone" as found in Pennsylvania, is included with tripolis. The Pennsylvania "rotten stone" contains only about 60% free silica along with approximately 18% aluminum oxide and 10% iron oxide. The European "rotten stone," fair amounts of which were imported prior to the war, represents 80-85% of aluminum oxide and only 4% of free silica.

The porosity of tripoli with obvious resulting high surface area, is at least in part accountable for tripoli's unusual electrical state and attending propensity for surface phenomena. This fact provides necessity for the water proofing of tripoli as used in foundry partings, as later discussed, in order to inhibit water adsorption. These phenomena constitute the basis for the contention running through this report that tripoli en masse is more resistant than other silica dusts to introduction into the atmosphere.

The second outstanding characteristic of tripoli is

micro crystallization. The individual crystals may on occasion be as small as 1 micron and which at all times are limited to microscopic range. For this reason some tripolis are described as amorphous or colloidal. It is not known that any true tripoli is amorphous and it may follow that if truly amorphous, the mineral so described is not a genuine tripoli.

Deposits

THE name "tripoli" has been applied to minerals of commercial import in only five small areas, namely, (a) the Missouri-Oklahoma district with one county in each state; (b) the Illinois district, limited to deposits in two counties in the southern portion of the state; (c) the Tennessee-Georgia-Alabama district, embracing several contiguous counties of these states as they bound one another; (d) the western Tennessee district, representing deposits in Tennessee, Mississippi and Alabama and chiefly at boundary points; (e) in Arkansas where the mineral in question is so dissimilar to some other varieties of tripoli that warrant for inclusion may be doubted.

Further, from the states of Indiana, Kentucky, Minnesota, Iowa, California, and possibly Kansas and Texas, minerals have been produced leading to some use of the term "tripoli." That this use is justified is not known. All considered, it will be recognized that the name "tripoli" is loosely used commercially so that the industrial hygienist in attempting to earmark physiologic properties, must recognize endless varieties in types or else accept the concept that genuine tripoli is limited to the Seneca district where the name originated. Even in that district geographically closely centered beds exhibit individual physical peculiarities.

Production Operations

THE Seneca district procedures are now meagerly described, but these operations may not be accepted as representative of all others since in some instances other operations carry out wet grinding after room and pillar mining in contrast to Seneca's open pit quarries. The Seneca beds approximate 14 ft. in thickness and lie under an over-burden of loose dirt and gravel from 5 to 8 ft. After stripping, simple quarrying operations are carried out which yield lumps or blocks of well wetted tripoli running about 45 cubic ft. to the ton. The lumps are friable, but the individual particles which are on the order of 100 micron size, or less are exceedingly hard and will cut glass and score steel. The Seneca tripoli is preponderantly cream, never pure white, but yields of yellow, rose or red are obtained through selection. Air drying is carried out in weathering sheds; at least one third of the original weight is lost in this air drying process.

At the mills the chief operations are picking, grading, grinding, and packaging, although at times mass objects have been produced such as filter stone, rarely building blocks, etc. Commonly three grades are produced by dry grinding, namely "once ground," "double ground," and "air float." Without describing the fineness of the several grades, it may be pointed out that in all forms a considerable percentage, if not all, passes the 325-mesh sieve, thus paving the way for physiologic concern.

Reverting to the general situation, in the year 1940 the total production of those materials classed as or with tripoli, was 30,212 tons, of which approximately 14,000 tons found its way into foundries for parting purposes. The remainder is variously applied as a paint filter, as an abrasive material, in Portland cement, filters, in the petroleum industry among others.

Experimental Proliferative Reactions from Tripoli

THAT common commercial varieties of tripoli will create active proliferation by the Miller-Sayers technique of intraperitoneal introduction is well established.[7, 8] There remain to be determined by this procedure such items as: (a) Will colored tripolis because of envelopes of ferrous compounds be inhibited from proliferative action? (b) Will coating materials on waterproofed tripolis induce any physiologic action within the peritoneum? (c) Will waterproofed tripolis induce proliferation thus furnishing additional proof of the lack of universal coating or else the removal of the coating? (d) Will all tripolis from the several producing areas including some of possible colloidal nature, impart similar action through the Miller-Sayers technique and approximately of the same extent?

Toward these objectives 45 tripoli samples were obtained from Missouri, Illinois, Tennessee, Alabama, and Arkansas, together with treated and untreated samples from mills in other states manipulating the products from the mentioned states. These samples represent colored, uncolored, "once-ground," "double ground," "air float," tallow-treated, stearic acid-treated along with non-siliceous partings, being phosphates and carbonates. To reduce stearic acid to a particle state that would pass through a syringe, it was coated onto gypsum, a known absorptive dusty material.[7]

The Miller-Sayers procedures were followed except in the following: we used rats as well as guinea pigs, and the amount introduced was 0.2 gm. Arbitrarily 45 days were accepted for the physiologic action period, although a few animals were continued for 60, 90, or 120 days. A total of 138 animals was utilized in this project. Since in the lot of 45 samples there were some duplicates, only 23 were selected for intraperitoneal injections. Thus the number of animals per sample averaged six. The results obtained are shown in Table II. These results allow some conclusions as to the queries imposed at the beginning of this section:

Colored tripolis are no less active than the cream or white in the causation of proliferation. The Miller-Sayers method does not profess exact quantitation so that the only statement made is that the average quantity of proliferation appears to be no less in the case of colored tripolis. In the past some claims have been put forward that artificial ferrous coatings hamper silica action. These naturally enveloped silica particles do not so conform, under the conditions of our application.

Stearic acid (as the chief component) and tallow, appear not to introduce any action of their own when implanted intraperitoneally or by accident subcutaneously. They are rated as inert substances, although proof is lacking that no absorption whatever took place.

Waterproof tripolis from the use of either stearic acid or tallow (chief ingredients) clearly produced proliferation, but only to a degree much less than that from the same tripoli uncoated. This proliferation is attributed not to action in spite of coating, but instead to failure to provide coating. Elsewhere we have recorded the belief that not more than 50% of the particles are now coated by commercial practices, and this includes many of the dangerous size range.

Two samples of non-siliceous parting materials (calcium carbonate and calcium phosphate) as tested proved respectively to be absorptive and inert. All tripolis of whatever source have yielded proliferative responses. Since of all samples a large portion passed the 325-mesh screen, it has not proved possible to demarcate clear cut differences between the "once-

TABLE II.
RESPONSE FOLLOWING INTRAPERITONEAL INTRODUCTIONS OF TREATED AND UNTREATED TRIPOLIS AND SUNDRY MATERIALS

Lot No.	Nature or Source	Response P Proliferative I Inert A Absorptive	Remarks
1.	Stearic acid Coated gypsum	I	Gypsum used merely to reduce stearic acid to fine particulate size.
2.	Missouri tripoli Parting grade	P + + +*	Applied as received from vendor. Not screened.
3.	Stearic acid coated Missouri tripoli	P + +	As above.
4.	Tallow coated Missouri tripoli	P + +	Coating material dissolved in petroleum solvents for application.
5.	Missouri tripoli Cream color	P + + + +	Air-float fineness. Not further screened.
6.	Missouri tripoli Cream color. Double-ground	P + + +	Not screened in laboratory.
7.	Missouri tripoli Cream color. Once-ground	P + +	As above.
8.	Missouri tripoli Rose color. Air-float	P + + + +	As above.
9.	Missouri tripoli Rose color. Double-ground	P + + +	As above.
10.	Missouri tripoli Rose color. Once-ground	P + + +	As above.
11.	Illinois tripoli White	P + + + +	Commercially called "Silica," at times called "Soft Silica." Not pure white. Not screened in laboratory.
12.	Illinois tripoli Super-white	P + + + +	As above.
13.	Non-siliceous parting. Calcium phosphate	I	Uncoated. Not screened in laboratory.
14.	Non-siliceous parting. Calcium carbonate	A	See Citation (7).
22.	Missouri tripoli Stearic acid coated	P +	Different vendor to No. 3 above. Method of application may be different.
25.	Rose tripoli. Once-ground	P + + +	Quarry origin uncertain. May be same as No. 10. Different vendor. Screened in laboratory to maximum of 325-mesh size. Commercially listed as "silica."
27.	White silica. "Smoke" fineness	P + + +	Quarry origin uncertain. Presumably Illinois tripoli. Commercially listed as "silica." Screened in laboratory to maximum of 325-mesh size.
33.	Ground silica sand parting	P + + +	Not tripoli. "Silica flour." Screened in laboratory to maximum of 325-mesh size.
34.	Coarse so-called white colloidal silica. Arkansas	P + +	Not called tripoli commercially. Crystalline nature uncertain. Screened in laboratory to maximum of 325-mesh size.
35.	Tennessee tripoli. Greenish-brown color	P + + +	Screened in laboratory to maximum of 325-mesh size.
39.	Alabama tripoli. White	P + + +	As above.
44.	Missouri Cream tripoli. Parting grade. Paraffin coated	P +	Same as No. 2. Paraffin treated in laboratory.
45.	Ground quartz sand (control)	P + +	325-mesh quartz sand. Prepared in laboratory.

*Arbitrarily those minerals yielding the greatest degree of proliferation are indicated P + + + +. The quantity of proliferation from all other minerals is approximated on this scale.

ground" and the "air-float" samples. All fall within the quantity limitations of the method employed.

This section reaffirms the belief that no variety of tripoli owes any low capacity to cause silicosis to inability to produce proliferation as here determined.

Waterproof Tripoli

FOR reason of moisture avidity, tripoli, unlike other substances used in foundries for parting purposes, is coated to render the particles waterproof. The materials used for this objective vary among producers, but in general represent mixtures of stearic acid, tristearin, tallow, paraffin, oleates, together with small quantities of waxes and similar substances.

The manner of application of the coating to tripoli likewise varies. In some instances the coating materials are dissolved in petroleum derivatives and under high temperatures mixed with the tripoli. In other instances solvents are not used and tripoli is added to melted masses of the fatty substances. In both processes long continued agitation promotes the coating of individual particles. Pressure cookers are employed in some factories. Some producers claim that every particle ultimately receives treatment. Such is not the case. The fact that the treated product floats and may not readily be made to mix with water constitutes no proof of the universality of coating.

Using oleophilic dyes, we have attempted to distinguish between the coated and non-coated particles. Ethyl alcoholic dilutions of the stains were so made that the alcohol would not dissolve the fatty coating but still would possess a surface tension approximating 25 dynes per centimeter. Applying such stains to coated tripoli in mass, failed of penetration thus possibly reproducing the same type of problem entailed in the fatty coating process. Potentially fallacious results followed in which many masses and many particles were untouched by the dye. However, suitable results were obtained when the various preparations of tripoli were atomized upon microscopic slides previously treated with traces of suitable fixatives. The degree of dispersion readily permitted contact between tripoli and dye. Of several dyes Sudan III proved best. This substance will not necessarily color all types of coating materials, but in all instances enough true fat was present as a constituent, impurity or otherwise to provide staining. On microscopic examination Sudan III was found not to color the raw tripoli except in traces but the coated particles and masses were characteristically stained. In the latter preparations high numbers of particles were uncolored and thus presumably were uncoated. Near the limit of resolving power of microscopes the determination of color is not easy so that the following statement is made with reservations. It appears that near 90% of the tripoli volume may have been coated while possibly not more than 50% of particles may have attained a coating. While the parting function may have been perfectly served by this kind of preparation, physiologic safeguards are only imperfectly served. An ultra conservative statement is that not all particles are coated in the several samples at our disposal. These uncoated particles are now regarded as the source of the degree of proliferation in animals elsewhere described.

Some consideration has been given in an earlier section to the physiologic significance of tripoli waterproofing. This significance is further mentioned here. In the use of stearic acid, as the major constituent of coating substances, the melting point of the mixture becomes somewhere near 160-170° F. When tallow serves as the sole or chief constituent, the melting point is somewhere near 118-125° F. Obviously removal of a coating through melting within the body

is unlikely. Apart from the alimentary tract, which is ordinarily not concerned in silicosis causation, no biologic process is known whereby coated particles deposited within the peritoneal cavity and conceivably within pulmonary tissues, will be digested, dissolved, or metabolized with any end result that the tripoli particle will exert its usual action. These statements better apply to intraperitoneal implantations of fat coated material for which there is support, but in the case of pulmonary tissues no exact information has been established beyond the fact of rarity of silicosis, and the statements made are predicated upon general knowledge of the fate of waxy and fat material within the body. Thus, for example, it is well known that paraffin implanted within tissues in the attempt toward facial reconstruction is not metabolized, although paraffinomas are known to have arisen.

Information at this time in hand suggests that the complete coating of every particle of tripoli for industrial ends constitutes a favorable circumstance, making such coated tripoli comparatively innocuous as a source of silicosis instead of a highly dangerous material as sometimes claimed. The services rendered by waterproofing seem to have escaped the consideration of those persons who have condemned this material for parting use. After metal pouring the tripoli coating is destroyed by combustion and temporary complete dryness occurs. In such subsequent operations as "shake out," the relatively trivial amount of tripoli may contribute to the general dustiness, but it is observed that the unfavorable claims against tripoli have been associated with the pre-pouring operations; thus they become doubtful.

As noted elsewhere, coated tripoli loses all, or nearly all, of electrical charges and any protective benefits associated therewith. However, this loss appears to be replaced by another form of protection, namely, the provision of an impervious waxy barrier. Manifestly, these statements do not apply to ground up quartz, i.e. the so-called "silica flour" when used as an uncoated parting, nor do these statements necessarily apply to raw tripoli which exceptionally is used for parting purposes. The drawback to the protection here described resides in the fact that not all so-called coated tripoli is actually coated. The protection under discussion is only as extensive as the degree of coating provided tripoli particles. Although tripoli coating was not introduced as a silicosis preventing measure, this possibly beneficial secondary achievement should lead to an effort to furnish products fully coated. A preference is here recorded for well coated tripoli for parting purposes over any uncoated siliceous material so used.

Electrical Charges on Dust Particles

IT IS the rule and not the exception for dust particles either suspended or settled to possess electrical charges of either plus or minus signs.[9, 10, 11] Although it is common practice to refer to a dusty material as having a plus or a minus static charge, actually to any such material either a plus or minus charge may be imparted. At all times any and all particles possess both signs, the usual reference being made to whichever sign presents the net excess. From the chemical nature of dusty materials it is somewhat possible to predict the nature of the usual net excess.

In a mixture of many sized particles the relative size may determine the net charge. Larger particles more often present positive charges and smaller particles negative ones. The quantity of electrical charge chiefly is a matter of surface area (specific surface) for a given material. The greater the surface, the greater the capacity. This contact electricity is intimately associated with special arrangements of surface molecules.[12] Out of these facts derive the peculiar phenomena of adsorption, surface tension, interface actions, etc. The ultimate unit of dust electricity is the electron. On every ordinary dust particle of that size likely to be of physiological interest, there may be electrons in numbers approximating 34,000. However, when the specific surface is high, that number may be enormously increased.

The origins of static electricity as found on dusts are numerous, giving rise to such terms as "frictional," "tribo," "thermo," "chemical," etc.; the most likely cause in the case of industrial dusts is frictional, as exemplified in milling operations. These terms do not imply different forms of electricity but the phenomena associated may be different, explainable by means of terms such as "true charge," "free charge," "dipole units," etc.[13]

On an elementary basis it will be recognized that particles with the same sign repel each other and those with different signs attract, at least temporarily. Under some conditions, prolonged coherence takes place with the end result that some potentially dusty materials do not readily lend themselves to the formation of atmospheric dusts. In this situation additional factors to electrical charges may play a part. The hygroscopic state is commonly associated with chemical rather than physical structure and some substances are commonly known as deliquescent materials. On the other hand, hygroscopicity may be influenced by electrostatic charges so that condensation films may be related to electrostatic envelopes and both related to surface area. This means that in a fixed humidity some fine materials apart from chemical structure may possess greater surface moisture than others.

Now it becomes desirable to consider tripoli in special application. Tripoli is a highly canaliculated material and thereby possesses low mass for its volume and conversely high surface area (specific surface). Because of high surface area the density of the surface electrical phenomena may be great. Similarly, its responses to atmospheric moisture may be outstanding. Under actual industrial conditions on days of increased humidity, cream tripoli that ordinarily might be screened through 325-mesh sieve may not be sieved higher than through a 100-mesh screen. This is not true for all tripolis and all other dusts of equal size particle. At all times, apart from the state of essentially complete dryness, common tripoli (i.e. uncolored) better resists those forces that introduce aggregate fine material into the atmosphere as suspended dust.

This may not readily be accounted for by the mere demonstration of electrostatic "true" charges. Some other dusts exhibit an equally high degree of true charges without offering equal resistance to introduction into the air as suspended dust. Better explanation may be found in "dipolar" attraction. A "dipole unit" represents a positive and negative "free charge," the algebraic sum of which is zero in the particle in which they exist, but which are attracted to opposite charges in other particles and on neighboring surfaces.[13]

In this complex series of phenomena leading to a coherence property in tripoli, several circumstances contribute somewhat as follows: (a) a well established "specific surface"; (b) a high degree of surface action (adsorption) which eventuates in tripoli being more responsive to atmospheric humidity leading to adsorption films; (c) "dipolar" attraction as a result of "free charges" on tripoli which free charges are believed to be located near the surface in all substances with marked specific surface. At once it becomes apparent that this property may not artificially be imparted to dusts in general since high specific surface is the primary requisite for all the mentioned phenomena.

Once completely dispersed, the behavior of tripoli is perhaps not greatly unlike any other dust of equal particle size. Interparticle attraction rapidly diminishes with the distance between particles. In dust counting after collection by the impinger method, no agglomerates may be found. This does not represent fracturing of particles but instead simple shearing, the bond between particles being tenuous.

From all the foregoing, the expected degree of coherence may be exaggerated. Only relatively does tripoli offer resistance to change from the heap state to that of atmospheric dispersion. This may be demonstrated through "spatter patterns." For this purpose we built a metal cylinder 10 in. in diameter, 8 ft. high, and mounted this on 4 in. legs. This cylinder was placed above a blackboard about 4 ft. square. At the top, a device was created for dropping measured or weighed quantities of various dusty materials under identical conditions. Using such a device with dry tripoli, the spatter pattern was similar to other dusts and occupied a grossly involved area about 3 ft. in diameter. However, if this same tripoli be exposed to a humid atmosphere for 20 minutes, the spatter pattern area then is limited to about 3 in. in diameter. Some other dusts require more than 24 hours to attain this degree of "wetness."

Similarly, if a small heap of tripoli be placed on a flat table and subjected to the action of an air hose, the tripoli is unable to resist the shearing action of the air stream to a greater degree than other tested fine materials, but on disintegrating the tripoli rolls away in shot size globules, while other dusts attained immediate finer dispersion.

It is the thesis of this section that tripoli because of surface phenomena, is less likely than some other fine materials to provide marked atmospheric dustiness as a result of its industrial manipulation.

Colored Tripoli

PARTICULARLY in the Missouri-Oklahoma area and to lesser extent elsewhere, tripoli is encountered in colored forms—yellows, brown, rose, and red. One Georgia deposit shows soft yellow and light orange tints. The most nearly pure white varieties occur in southern Illinois and Arkansas. These colors represent staining of whiter tripoli from chemicals lying in the overburden. The extent and location of pigmentation largely are fortuitous, depending upon the proximity and accessibility to overlying substances together with the nature of these covering earths. The chief staining material is iron, possibly in the form of the oxides. Leaching waters through the centuries, first seeping through the overburden, have later penetrated the tripoli deposits in haphazard fashion. The Missouri-Oklahoma tripoli is never pure white and predominantly is cream. It is conceivable that all of this variety represents trace coatings from overlying earths, although chemical analysis fails to reveal other than trivial amounts of substances other than silica. The maximum amount of iron on tripoli is about 2%. This is present as an envelope on the tripoli particles and may be dissolved by weak acids, leaving the tripoli intact in a near white form.

Some well colored tripolis present diminished electrostatic charges compared with the common form. This is well known in the trade and leads to recognizable differences in behavior in preparation steps. Notwithstanding, rose tripoli is the variety of choice in the buffing industry, the belief being that this tripoli better clings to the textile buff.

It was conceived that the ferrous envelope about tripoli particles might lessen the usual silica action on tissues and thus introduce an additional factor of safety, but as elsewhere noted, rose colored tripoli was found to induce the same degree of proliferative response. While the Miller-Sayers technique is not precisely quantitative, the regularity of similar reaction from rose tripoli suggests no protective influence from this pigment material.

Summary

HUMAN silicosis from the mineral tripoli occurs but is infrequent although experimental proliferative reactions readily may be produced by all varieties of true tripoli. The extent of mechanical protection against atmospheric dustiness in tripoli-using industries does not regularly account for the low incidence of clinical silicosis. From an investigation of contributory influences, the conclusion has been reached that four circumstances representing either natural properties or artificial states act as deterrents to the action of this mineral which contains approximately 98% free silica. These are:

1. The high canaliculation (porosity) of true tripolis eventuates in a large surface area per unit of mass (specific surface).
2. High specific surface favors adsorption phenomena of which hygroscopic films are one aspect.
3. Related to surface phenomena is an unusual degree of dipolar electrical attraction. A dipole is a positive and negative "free charge" fixed in one mass unit, with a total charge of zero, but having attraction for other dipoles on other units or on neighboring surfaces. Tripoli does possess extensive electrostatic charges "true charges" but this is equally true of quartz silica and other dusty materials with behavior different to tripoli.

All the foregoing natural properties operate to provide a measure of coherence between fine tripoli particles so that a relatively greater degree of resistance is offered to those forces that tend to thrust fine materials into the atmosphere as suspended dust. Once in the atmosphere, dipolar attraction is markedly diminished as interparticle distance increases.

4. The fourth protective feature is artificial. Adsorption forces leading to hygroscopic films on particle faces, necessitate the waterproofing of tripoli prior to use as a foundry parting. The chemical nature of the waterproofing coatings favors no, or diminished, physiologic reactions. These materials have melting points well above body temperature and are not known to be removed by any physiologic process. The extent of physiologic inertness appears to depend upon the efficacy of the coating process. Not all, and particularly not all particles below 5 microns, are coated.

Recognizing tripoli as a highly siliceous substance and thus potentially dangerous when in a suitably fine state, these four mentioned factors are marked as contributors to the low incidence of silicosis among those workers engaged in its manipulation.

[ACKNOWLEDGMENTS: Gratitude and full recognition are extended to ANDREW GEMANT, of the Detroit Edison Company, whose extensive knowledge of dielectrics and static electricity has guided the conclusions as to the surface phenomena encountered in this investigation. Appreciation is expressed to a large number of tripoli producers and manufacturers of tripoli products who have furnished materials for investigation.

Likewise recognition is made of the valuable services of RAYMOND D. MURPHY, diener.]

Citations

1. MERRITT L. M.: "Incidence of Silicosis in Foundries," *Bul. Ind. Com. of Ohio*, 15:83, June, 1941, also 13:99, July, 1940.
2. MCCORD, C. P.: "Tripoli as a Source of Silicosis," *J.A.M.A.*, 106:913, 1936.
3. LAMBIE, J. S.: "Experiences with the use of Amorphous Silica," *Indust. Med.*, 7:470, August, 1938.

4. GARDNER, L. U.: Personal Communication, 1942.
5. BERKELHAMER, L. H.: "X-Ray Diffraction," *J. Ind. Hyg. & Tox.*, 23:163, May, 1941.
6. HEINZ, C. E.: "Tripoli," "Industrial Minerals and Rocks," *A.I.M.E.*, 1937.
7. MILLER, J. W.: and SAYERS, R. R.: "The Physiological Response of Peritoneal Tissue to Certain Industrial and Pure Mineral Dusts," *U. S. Public Health Reports*, 51:1677, 1936.
8. MCCORD, C. P., and Others: "The Measurement of the Harmfulness of Dusts Through the Agency of Animal Reactions," *Surg., Gyn. & Obst.* 63:129 August, 1936.
9. TUNITAKII, and Others: "Triboelectrical Charges on Dust Particles," *J. Tech. Phys.*, (U.S.S.R.) 10:1723, 1940.
10. SACHSSE, H.: "The Electrical Properties of Dusts and Fogs," *Ann. Physik*, 14:396, 1932.
11. BONING, P.: "Dust Electricity," *Tech. Physik*, 8:385, 1927.
12. GUEST, P. G.: "Static Electricity in Nature and Industry," *U. S. Bureau of Mines Bul.* 368, 1939.
13. GEMANT, A.: Personal Communication, 1943.

Additional Bibliography

1. BUTLER, P. B.: "Tripoli," *Min. & Met.*, 9:527, 1928.
2. LEVINGS, G. V. B., and BUTLER, P. B.: "Tripoli," *Mc. Ind.*, January, 1924.
3. COX and Others: Cited by HEINZ above.
4. CRICKMAY, C. W.: "Tripoli Deposits in Georgia," Dept. of Geol., Atlanta, 1937.
5. LADOO, R. B.: "Non-Metallic Minerals," McGraw-Hill Book Co., New York, 1925.
6. Minerals Year Book, U. S. Bureau of Mines; Yearly Reviews.

Public Health and Industry

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WHY are we in public health interested in industrial health?

For several very important reasons:

First, because the industrial population is so large and forms such an integral part of the community. There are over 50,000,000 people employed in the United States, 38,500,000 of whom are in non-agricultural employment. In Kansas City alone, according to the last census of 1940, there were 191,000 employed, and the figure is now much greater.

Secondly, because the industrial population is so tied in with the war effort. There will be 20,000,000 in war industry in 1943, and right here in Kansas City there will be about 134,000. The effect of sick absenteeism on production when dealing with such large groups can be extremely important.

Thirdly, because of being grouped, the industrial population lends itself to public health methods of prevention. The keynote of public health is prevention rather than cure.

Now let us go back to the first reason. Because of the size of the industrial population, they are subject to illnesses similar to those in the community at large. Thus if the death rate of the industrial population is high, it will be high for the community. They are subject to the same illnesses that we are trying to control, that is, heart disease, tuberculosis, syphilis, pneumonia and a number of others. The non-occupational diseases cause over 95% of the deaths in the community, yet they occur in the occupational group as well as in the non-occupational group. The occupational group contributes its share according to its percentage in the population. That is the important point. Most industries are only concerned with strictly occupational conditions, yet these only cause 5% of the deaths in the community. And not only deaths, but illness as well, and that is where absenteeism comes in. Of all the absenteeism in industry due to illness and accidents, only 8% is caused by occupational reasons, such as occupational accidents and occupational diseases—skin conditions, silicosis, lead poisoning, or a number of others. Yet most industries are extremely concerned about occupational illness and accidents and don't care about general illness which causes 92% of absenteeism. I don't mean to say that occupational accidents and illnesses are not important, because anything is important when we are dealing with such large groups of people as the industrial population. In the last 15 years, in Missouri alone, with a population of 3,784,000 there were 54 million dollars paid out in compensation claims. We'll go into that later. But think of all the millions of dollars lost by the absenteeism due to general illness which causes 95% of all illness. Throughout the United States there were 400 million days lost in one year due to absenteeism. Figure out for yourself the amount of wage loss alone and the tremendous ill effect on our war production effort. Now of this 95% cause for absenteeism due to illness, at least half is due to diseases of the respiratory and digestive tract such as colds, flu, pneumonia, appendicitis, acute gastro-enteritis and the like. In other words, just common everyday illness.

Add to these causes such things as worry due to illness at home, lack of sleep, improper diet and poor habits of hygiene, and we begin to see what a tremendous field is opening up for the application of prevention.

Unfortunately, if medical and nursing groups and management continue along the old plan of "treatment only," there will be no reduction of this loss. As a matter of fact, the trend of accidents is upward already. Unfortunately, in relation to industry, the medical profession thinks only in terms of traumatic surgery; nurses consider it only in the light of first aid and the number of injured visiting the dispensary; management's conception is that of accidents, and insurance premiums; and labor, in some instances, greets health programs with resistance. Unfortunately, I repeat, industrial health practice in most instances has never progressed beyond the initial stage of "treatment for injury" only. In other words, wait until a failure in health results due to accident or illness and then treat the failure. Wait until you get 1,600,000 injuries, as occurred in industry in 1941, or wait until you get 150,000 deaths from cancer, 60,000 deaths from tuberculosis, and so on. This is obviously a wrong conception, and yet it is so difficult to correct because of the attitude of the various groups involved. How much more benefit could be derived from a program of prevention. "An ounce of prevention is worth a pound of cure."

What can a system of industrial health maintenance accomplish? And this applies particularly to management. The National Association of Manufacturers have surveyed industry and found that an adequate health program in an average 500-employee plant earns $5,611 net annually. The percent of reductions that can be gained by an adequate health program, and notice I said adequate, are:

1. Accident frequency 44.9%
2. Occupational disease 62.8%
3. Labor turnover 27.3%
4. Absenteeism 29.7%
5. Compensation insurance 28.8%

Not only that, but practically all of the plants surveyed showed an improvement in labor relations.

It is a good thing to remember that the "employer is the number one consumer of industrial health." He is the one who uses it to turn out production and who has to expand his program and put it into effect. And yet, he is not the only one involved. It requires the cooperation of employers, workers, the medical and nursing professions, the health department, and various related parties such as insurance companies, industrial commissions, safety and personnel organizations, rehabilitation and voluntary health agencies.

Presented at the Annual Meeting of the ASSOCIATION OF RAILWAY AND INDUSTRIAL PHYSICIANS AND SURGEONS OF KANSAS CITY, March 17, 1943.

And when we talk of expanding a health program in industry into an adequate preventive program, what do we mean?

We mean a physician who is connected with a plant and therefore responsible for the health of its workers, going into the plant and performing as many of the duties connected with the plant as is possible to do right in the plant medical room. This affords him the opportunity of becoming familiar to the employees and the conditions under which they work. This is the only way he can properly perform preventive industrial health service. The duties which he usually carries out are:

1. Supervision, in cooperation with the safety department, of plant hygiene to assure a healthful working environment.

2. Pre-placement and periodic physical examinations including blood tests, and x-rays of the chest. Here I want to place particular stress on several points. The first is that I speak of these physical examinations as pre-placement rather than pre-employment, because it is not felt that the examination should be used as a condition of employment; rather it is to be used properly to place the worker in a job suitable to his physical condition and for the protection of those who work about him. The doctor supplies the physical health background as it applies to the man's work. Another important point in connection with these physical examinations, and this applies both to the pre-placement as well as the periodic examination, is that a large part of the value of physical examination is lost to both the employer and employee if the medical staff fails to encourage correction of physical defects. In addition to increasing the employee's economic stability, his period of usefulness to himself, his family and the community, the correction of so-called trivial defects will reduce absenteeism and injury.

3. Additional duties of the medical department are health lectures and consultation on health matters and emergency care for the injured.

The above duties include the participation of the plant nurse as well. No longer is the plant nurse's attention confined to first aid treatment. She is expected to take an active part in health education and to aid in the correlation of the employee's physical condition and the influence of his surroundings while at work. Also, to aid in the encouraging of correction of physical defects through proper follow-up and proper use of community agencies. In other words, the medical department assists the employee in evaluating the seriousness of an illness or physical defect and helps in obtaining proper medical care. And, through the use of proper record keeping, absenteeism is investigated and corrected.

Why can industry lend itself so easily to the public health preventive method? Because industry by the very nature of its set-up has large groups of individuals congregated under one roof, so to speak, to which public health methods can be applied. The method that was used to protect children against contagious disease through reaching them in groups in the schools and which has yielded such brilliant results can be applied to industry to reach the health problems of the adult population. Finding and getting under treatment cases of tuberculosis and thus preventing many of the 60,000 deaths; finding and getting under treatment cases of syphilis and thus preventing its spread; finding cases of early cancer, especially among many of the women just coming into industry, and thus preventing many of the 150,000 deaths; improving nutrition, and thus aiding in maintaining positive health; protection against smallpox and typhoid fever, and other health procedures are relatively simple when working with large groups. A famous health commissioner some years ago formulated the following slogan, "Public health is purchasable. Within natural limitations, any community can determine its own death rate." Substitute the word morbidity, which means illness and accident, and the slogan for industry should be "Industrial health is purchasable. Within natural limitations, any industry can determine its own morbidity rate." Modern medicine and public health have the means to do it. Will industry use them?

References

1. JOHNSON, ORLEN J.: "Public Health and Medical Relationships in Industrial Health." *Am. J. Public Health*, 32:1157, October, 1942.
2. ROBSON, R. R.: "Health Maintenance in Small Industry." *Am. J. Public Health*, 3:162, February, 1941.
3. Vital Statistics: Special Reports, Bureau of Census, Washington.
4. "Industrial Health Practices." National Association of Manufacturers.

Industrial Medical Facilities in Pennsylvania

—Results of a County by County Survey—

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THE Commonwealth of Pennsylvania has long been recognized as one of the largest industrial states in this country and has become a leader in war production. The Pennsylvania Bureau of Industrial Hygiene of the Department of Health has a staff of industrial hygiene physicians, engineers, chemists and other technical personnel who furnish medical and engineering services to Pennsylvania industrial plants. The Bureau maintains a central laboratory in Harrisburg and branch laboratories and offices in Philadelphia, Pittsburgh, Erie, Altoona, Willamsport and Scranton.

The Pennsylvania State Medical Society's Industrial Hygiene Commission was quick to realize the necessity of establishing a program of medical aid to the industries in the Commonwealth. The various county medical societies were therefore urged to set up a program in each county whereby all industries could avail themselves of medical facilities. Each county medical society formed an industrial hygiene committee, which committee, in cooperation with the Bureau of Industrial hygiene of the Pennsylvania Department of Health, is inaugurating and establishing in the various industrial establishments in its particular county, a general program of industrial health. All 60 county medical societies have organized industrial hygiene committees.

Upon the request of a county medical society, through its industrial hygiene committee, the Bureau of Industrial Hygiene conducts a survey of the medical facilities available at the present time in that county's industrial establishments. The survey has been conducted in 24 counties to date.

On completion of a county survey, a report is then presented at a joint meeting of the county medical society and industrial leaders for further discussion. Suggestions are considered and plans made to provide medical facilities to those industries which do not already have their own medical program.

To assist in selecting a physician, a list of all members of the county medical society who wish to cooperate in this program is drawn up. This list is divided into several categories, namely, those physicians who wish to serve industry on an hourly, daily or full-time basis. For example, if a plant request for

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a physician is for one hour per day, that plant will be furnished with a list of physicians in that county, each of whom specifies that one hour per day is all he can spend in a plant.

When a physician is engaged to spend a stipulated amount of time in a plant, his duties are as follows:

1. Supervise sanitation and working conditions, and become acquainted with the requirements of operations and processes.
2. Pre-placement and periodic physical examinations to include x-rays of chests and blood serology.
3. Health consultation and education of workers individually and as a group.
4. Treatment of such minor injuries as should occur while he is in the plant.
5. Supervise the keeping of adequate and accurate records of absenteeism.

The survey has been conducted on a personal interview basis with the investigator contacting an executive of each plant and obtaining from him the answers to a set form of questions relative to the subject under discussion. The answers received are held to be facts and no attempt is made to seek out information beyond that given by the person answering the questions.

Only plants employing 25 or more persons have been surveyed, it being felt that the smaller organizations could be interviewed later if desired.

A total of 3,086 plants has been surveyed. In these plants a total of 806,456 persons are employed; 569,232 being male and 237,224 being female. The plants range in size as follows:

Number Employees	Number Plants	Per cent Plants
25—50	780	25.3
51—100	937	30.4
101—250	800	25.9
251—500	320	10.4
501—1,000	143	4.6
Over 1000	106	3.4
Total	3,086	100.0

The following classes of industry are represented:

	Number Plants	Per cent Plants
Textiles and textile products	962	31.2
Metals and metal products	784	25.4
Food and kindred products	334	10.8
Paper and printing industries	225	7.3
Chemicals and allied products	141	4.6
Lumber and its manufacture	115	3.7
Clay, glass and stone products	111	3.6
Leather and rubber goods	101	3.3
Tobacco and its products	37	1.2
Miscellaneous products (dental supplies, laundries, surgical appliances, etc.)	276	8.9
Total	3,086	100.0

Thirty-four plants indicated that they furnish full-time physician service and 209 have a physician part-time, ranging from one to eight hours per day; 1,760 plants indicated that they have a physician on call while 1,083 do not provide any physician service.

The relationship between the size of the plant and the type of physician service provided is shown below:

From the above figures the presence or absence of a medical health program is indicated as follows:

MEDICAL HEALTH PROGRAM

	Number Plants	Per cent Plants	Number Employees	Per cent Employees
Medical Health Program	243	7.9	374,529	46.4
No Medical Health Program	2,843	92.1	431,927	53.6

As to nursing facilities, 243 plants provide full-time nursing service and 57 furnish part-time nursing service ranging from one to eight hours per day.

The relationship between the size of the plant and the nursing service provided is shown on page 381.

Six hundred and fourteen plants require a pre-employment examination, and 315 examine their employees periodically, once a year in 63 plants, twice a year in 147 plants, four times a year in four plants and an unspecified number of times per year in the remaining 101 plants which provide this service.

One thousand five hundred and twenty-nine plants indicated that they treat only accident cases which would be compensable and the remaining 1,557 treat emergency illness as well; 221 plants have regular inspection for hazards, made by the plant physician.

A tabulation was made of the number of employees referred to the plant medical departments during the 12 months preceding the survey. Four hundred and sixty-three of the plants actually handled 1,524,071 cases, while 1,829 others estimated that they took care of 992,411 cases, these including, of course, all types of visits to the medical personnel. No record of any sort was available in 794 plants.

It was ascertained that 753 of the plants have a sick benefit association, 119 being supported by the company alone, 382 by the employees and the company, and 252 by the employees alone. Less than 25% of the employees belong to the association in 28 of these plants and in 24 the percentage was unspecified. In 87 plants, however, from 25 to 50% are members, in 137 plants from 51 to 75% are members and in 477 plants from 76 to 100% of the employees are members of the sick benefit associations. Benefits are paid only for sickness in 425 of the associations and in 269 death benefits are also included. Unspecified benefits are provided by 59 associations.

One thousand five hundred and twenty-one of the plants have a hospital insurance plan with 255,035 employees indicated as being members; 1,361 of the plans provide for payment of hospital fees while 76 include doctor bills as well. Unspecified benefits are available in 84 plants. The monthly cost per employee is less than 50 cents in 37 plants, from 50 cents to one dollar in 316 plants; over one dollar in 1,068 of the plants, and the cost was not specified in 100 plants.

It was found that educational posters such as those distributed by the National Safety Council; the U. S. Public Health Service; the Pennsylvania Department of Health and others were being used in 2,948 of the 3,086 plants, and all but 23 of the plants not now using them indicated the desire to do so.

PHYSICIAN SERVICE PROVIDED IN PLANTS SURVEYED

Size range (Emp.)	Totals		Full Time		Part Time		On Call		None	
	Pl.	Emp.	Pl.	Emp.	Pl.	Emp.	Pl.	Emp.	Pl.	Emp.
25—50	780	28,397	—	—	6	239	440	16,418	334	11,740
51—100	937	67,373	—	—	24	1,828	491	36,055	422	29,490
101—250	800	129,911	—	—	42	7,747	506	82,485	252	39,679
251—500	320	112,958	2	775	46	16,833	214	75,289	58	20,061
501—1,000	143	101,490	7	5,739	40	29,083	81	55,816	15	10,852
Over 1000	106	366,327	25	183,828	51	128,457	28	50,542	2	3,500
Totals	3,086	806,456	34	190,342	209	184,187	1,760	316,605	1,083	115,322
Per cent	100.0	100.0	1.1	23.6	6.8	22.8	57.0	39.3	35.1	14.3

NURSING SERVICE PROVIDED IN PLANTS SURVEYED

Size range (Emp.)	Totals		Full Time		Part Time		None	
	Pl.	Emp.	Pl.	Emp.	Pl.	Emp.	Pl.	Emp.
25—50	780	28,397	2	57	1	30	777	28,310
51—100	937	67,373	10	751	6	504	921	66,118
101—250	800	129,911	34	6,457	19	3,433	747	120,021
251—500	320	112,958	51	19,069	17	6,317	252	87,572
501—1,000	143	101,490	60	45,264	7	4,685	76	51,541
Over 1,000	106	366,327	86	324,848	7	17,560	13	23,919
Totals	3,086	806,456	243	396,446	57	32,529	2,786	377,481
Per cent	100.0	100.0	7.9	49.2	1.8	4.1	90.3	46.7

Eleven hundred and ninety-one of the plants were interested in having a physician make health talks to their employees, and 967 expressed a desire to have educational health movies shown to them.

Sixteen hundred and five organizations said they would be interested in having an industrial hygiene survey made in their plant.

Seven hundred and fifty-three plants stated that they had a system for the recording of industrial absenteeism. However, of the 2,333 plants not using a system, only 697 expressed an interest in establishing one.

Questions on first aid facilities were asked: 777 plants have dispensaries and 689 of these are provided with cots ranging from one per dispensary to over two per dispensary.

In the disposition of accident cases, 1,941 plants stated that they rendered first aid for minor injury and sent the person to the hospital in major cases; 1,027 of the plants call a doctor of the employee's choice in major cases, and 118 plants did not specify their method of handling accident cases.

Two thousand seven hundred and twenty-six plants indicated that they have a person qualified to render first aid, 360 admitting that they do not. First aid cabinets are readily accessible to all workers in 2,850 plants and are kept locked in 459, various members of the personnel holding the keys. It is interesting to note that 3,062 of the plants stated that the contents of their first aid cabinets are properly maintained. First aid instruction has been given to all employees in 239 plants.

Venereal disease control was the subject of another set of questions, with 220 of the plants indicating that they have programs of this type; 110 of pre-employment examination, 38 of periodic examination, 27 of education, and 45 unspecified. However, 1,208 of the plants not having programs for the control of venereal disease indicated their interest in such a program.

The problem of nutrition was also investigated, and it was found that 212 of the plants have cafeterias, 126 maintained by the company and 86 operated by private concessionaires. The practice of allowing employees to eat in the work rooms is permitted in 2,549 plants. A tabulation of the length of the lunch period allowed indicated a 15-minute period in nine plants, a 30-minute period in 1,395 plants, a 45-minute period in 725 plants, a 60-minute period in 925 plants, and an unspecified period in the remaining 32 plants.

Summary

A TOTAL of 3,086 plants with 806,456 employees has been surveyed.

2. Full-time physicians are employed in 34 plants and part-time physicians are employed in 209 plants.

3. Full-time nursing service is available in 243 plants and part-time service is furnished in 57 plants.

4. Pre-employment examinations are required in 614 plants and periodic examinations are given in 315 plants.

5. Two hundred and twenty-one plants are inspected regularly for hazardous conditions by the plant physician.

6. Two thousand two hundred and ninety-two plant medical departments handled approximately 2,500,000 cases during the year preceding the survey, the remaining 794 plants having no record of this service. This includes plants with a physician on call.

7. Seven hundred and fifty-three plants have a sick benefit association and 1,521 plants have a hospital insurance plan.

8. Eleven hundred and ninety-one plants signified their interest in having a physician make health talks to their employees.

9. Sixteen hundred and five plants expressed interest in having an industrial hygiene survey made.

10. Two hundred and twenty plants have venereal disease control programs.

11. Seven hundred and seventy-seven plants have dispensaries.

12. Two hundred and twelve plants have cafeterias.

Conclusions

ONLY 7.9% of the plants, but 46.4% of the employees, are covered by a medical industrial health program; 92.1% of the plants, with 53.6% of the employees, do not have a medical health program.

2. The facts set forth in this survey prove conclusively the necessity for inaugurating a program of industrial health in all industries.

3. The medical profession, together with the State Department of Health through its Bureau of Industrial Hygiene, should assume the leadership in giving assistance and advice in the organization of adequate medical programs in industrial plants.

The survey has been conducted in the following counties to date: Allegheny, Beaver, Berks, Bradford, Blair, Cambria, Chester, Clearfield, Dauphin, Delaware, Erie, Huntingdon, Indiana, Lackawanna, Lancaster, Lawrence, Lehigh, Luzerne, Lycoming, Philadelphia, Schuylkill, Somerset, York and Westmoreland.

Industrial Dermatitis

—481 Cases—

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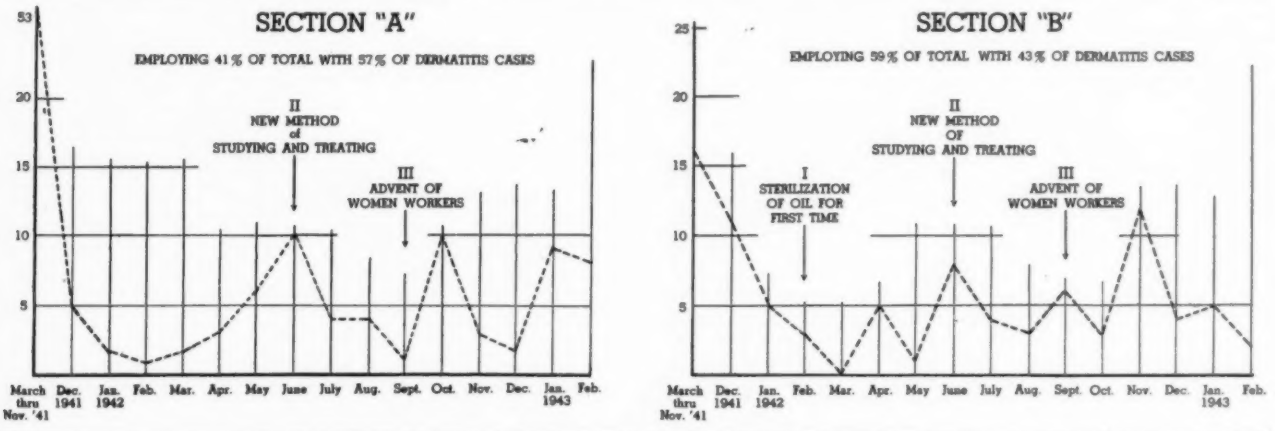
IT IS generally admitted that industrial dermatitis can be lessened by proper control, prevention and treatment. There is little statistical proof of this, however, and I would like to introduce this report as evidence to help substantiate that statement.

The industrial concern from which I am writing is an old munitions plant of some 8,000 employees. It is serving the country faithfully now as it was during 1918 and with no additional buildings or new methods for combating dermatitis. I mention this because we must consider this fact when we compare our figures with those of the new concerns that have sprung up


SECTION "A"
EMPLOYING 41% OF TOTAL WITH 57% OF DERMATITIS CASES
II NEW METHOD of STUDYING AND TREATING
III ADVENT OF WOMEN WORKERS
March thru Nov. '41
Dec. 1941
Jan. 1942
Feb. Mar. Apr. May June July Aug. Sept. Oct. Nov. Dec.
Jan. Feb. 1943
SECTION "B"
EMPLOYING 59% OF TOTAL WITH 43% OF DERMATITIS CASES
I STERILIZATION OF OIL FOR FIRST TIME
II NEW METHOD OF STUDYING AND TREATING
III ADVENT OF WOMEN WORKERS

with new buildings, new machinery and new methods of lessening morbidity caused by dermatitis. I mention this also to show that in spite of our handicaps, our low incidence of dermatitis begins to show what can be done with proper control, prevention and treatment. Whereas 70 days is the average lost time for a compensable dermatitis case, our figure is 8.3 days; whereas the average compensation paid is $100 for each case, our figure is $18.10; and whereas the average medical cost for each compensable case is $90, our figure is $23.75.

This table may well serve as a starting point for discussion of this subject:

Time element of this survey	March, 1941, through February, 1943
Total dermatitis cases	481
Occupational cases	215
Non-occupational cases	266
Number of days lost due to dermatitis	158
Number of reported dermatitis cases	19
Total cost of lost time due to dermatitis	$344.00
Total cost of medical care of dermatitis	$451.00 (one not included)
Total number of reported cases (injuries, etc.)	711
Percentage of reported dermatitis cases	2.6%

Etiology

OUR concern utilizes mainly a light oil, a heavy oil, a solvent and an emulsified oil or "soda-water." Both the heavy and light oils are paraffine base oils to which lard oil and sulfur have been added; they are used as coolants. The solvent is used as a cleanser and is a distillate that comes off in the distillation of crude petroleum between kerosene and gasoline.

There are two other reasons for dermatitis of an occupational nature, namely, (1) the cleanliness of the worker, and (2) the cleanliness of the machines. So far as the first reason is concerned, education is the only method of approach and this is being done in the every-day contacts we have with the men. The second reason brings out a problem which seems to be solved on the "B" section because the oil is removed from the machines often and sterilized; on the "A" section, however, the problem is ever present. This gives us a contrasting study which is of value.

Occupational Cases

THERE are 215 occupational cases. Of these the following percentages hold to an approximate degree:

Soda water .....about 43% of the cases
Oil .....about 24% of the cases
Solvent .....about 23% of the cases
Cyanide .....about 7% of the cases
Creosote .....about 3% of the cases

Non-occupational Cases

THE 266 non-occupational cases consisted of the following:

Acne; ringworm; psoriasis; impetigo; sulfathiazole rash; tetanus anti-toxin serum reaction; phenolax; hives; food allergy; epidermophytosis; seborrhea dermatitis; bromide rash; ivy poisoning; boils; pediculosis pubis; allergy to wrist watch strap; allergy to dye in silk stockings; sycosis vulgaris; adhesive allergy; measles; sunburn; use of harsh soaps; and the great scrap pile of dermatoses—eczema.

Patch Test

THE patch test was used 128 times. In the occupational cases there were 64 positive reactions and 14 negative reactions; in the non-occupational cases there were 39 negative reactions and 11 positive reactions. These are representative figures and help bear out the fact that the patch test should not be relied on to the exclusion of all other proof. The patch test was omitted in many other cases because the diagnosis was evident.

Comment on the Accompanying Graph

THE accompanying graph is divided into two parts—an "A" section and a "B" section because the plant is so divided and each section has different intrinsic factors. There were three landmarks during this 24-month period which contribute to the incidence of dermatitis and which are worthy of mention. First, the sterilization of oil in one half of the plant. During the few months following this step, the half of the plant having the sterilized oil showed a drop in the number of cases until the heat of the summer began to take its toll. On the other hand, the rest of the plant that had no sterilization equipment began its summer rise at that time until the middle of the summer when the second landmark stepped in to help. The "B" section of the plant is the larger one—accurate figures show that on 12-1-42 this section employed 59.3% of all the employees. In spite of this, after the sterilization of oil was started in this section, this section had fewer cases of occupational dermatitis in nine of the next 12 consecutive months. The second step or landmark occurred in June, 1942, when an original, complete method of studying, recording and treating dermatitis cases was instituted. In the hands of a dermatitis-conscious nursing and medical staff, it worked beautifully and brought the number of cases to an almost new low. Everything went on smoothly then until September when the great influx of women workers began. Since then, practically all records have been shattered, owing to the results of the harsh ingredients of the oil and solvents on tender skin. At the time of writing many of the women who had der-

matitis have cleared up by a change of work and some have cleared up on the same job.

Unusual Problems

IN FEBRUARY, 1943, an interesting diagnostic problem disclosed itself. Four cases of an eczematoid type of dermatitis on the hands presented themselves to me, three of which were from the same department, and the same operation. One piece of work is treated in a concentrated solution of cyanide and then, without any personal contact, is placed in a light oil bath to cool off. Inevitably there is an accumulative collection of cyanide in the oil pot. This oil pot communicates with a 10,000-gallon tank into which the used oil goes and from which a pump forces cool, rested oil into the working pot. It was found that the cyanide had become strongly concentrated in the oil pot and had been a competent producing cause of dermatitis. Because of the technical difficulties encountered in cleaning the huge tank out, a separator was installed near the working oil pot and a new belt was placed on the pump to step up the motor and the pumping force. The greater suction thereby produced caused the precipitated concentrated cyanide compounds to be more stirred up, the separator became plugged and the dermatitis became worse. So the tank was entirely drained and cleaned out. During this time one of the men was left on the same job during the entire procedure before, during and after, while the other two men were changed to a dry job. The one became worse after the pumping force was stepped up, but as soon as the tank was cleaned out he cleared up spontaneously on the same job. The fourth man was in another department which ordinarily had little contact with the first department. Upon careful investigation it was shown that some faulty work in his hands had had to be sent back several steps which included the immersion in the cyanide bath and the oil cooling bath and then returned to him. The situation is now cleared and the dermatitis is healed.

Still another time I began to see, within a few days, several cases of a vesicular, eczematoid type of dermatitis which were all from another department. An analysis of the situation in that department presented these facts. Certain pieces of work which had shallow dead-end holes in them had hitherto been subjected to an oxidizing process, washed in a solvent, dried by air hose and passed on to the next step with no ill effects. A few weeks before these particular cases came to my attention it was found necessary to begin to clean these shallow holes out with a boring instrument before the pieces were cleaned and dried off. The material that was loosened from the holes in this process was of a concentrated irritating nature and, when the air hose was directed into those holes, the material was forced out and hit the worker's face, hands and arms, with a resultant dermatitis. Before this became an uncontrollable source of dermatitis, a guard, concave downward, was put around the air hose so that these irritating particles when blown out of the holes would be reflected against the guard and not the worker's skin. Long rubber arm gauntlets and a full-face shield further helped to make this a safer operation.

There were three cases of creosote dermatitis which are very interesting. These are all from the same department where the dust from the walnut stocks which are dipped in creosote by government order settles on the perspiring skin of the worker and produces a crimson, diffuse eyrthema on first the exposed parts of the body and then all over. In fact, one man who remained on the job despite the order to change was literally covered from his bald head to his feet. Following this there was edema of his legs and painfully stretched reddened skin, which caused him to reconsider his stubbornness.

Conclusion

INDUSTRIAL dermatitis is a relatively new field. With a further knowledge of this field, and more thorough methods of investigation, more cases will probably be challenged by the insurance companies. At present, because there is hardly ever any permanent loss and only a few dollars in medical costs and a few days lost time involved, the insurance companies would rather not contest dermatitis cases.

There are only a few thousand or so full time industrial physicians in the country, and only a small percentage of these are taking the opportunity of studying the many, many millions of new war workers from a dermatitis standpoint. The opportunity will not present itself again in our life span. The important thing after all is not whether the insurance companies can successfully contest a greater percentage of these cases, but rather the number of man-hours that can be saved by proper prevention, control and treatment.

Dermatitis Due to the Formaldehyde Resins

— Prevention and Methods of Control —

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THE Bureau of Industrial Hygiene, Michigan Department of Health, has recently completed a study of a severe dermatitis outbreak due to exposure to formaldehyde resins. The study came about as the result of requests for assistance from four industrial plants in Western Michigan. The study involved these four plants employing 2,370 workers, of which number, 355 had developed dermatitis. Many of the cases were so severe as to require hospitalization. We are gratefully indebted to Dr. Louis Schwartz and Dr. Samuel Peck of the Office of Dermatoses Investigations, U. S. Public Health Service, for their valuable assistance in conducting the investigation. The prevention and control measures outlined herein represent in part our observation and basic recommendations.

Phenol Formaldehyde in War Production

THE injurious effects attendant on the manufacture and use of formaldehyde resins have been recognized for many years. Within the past year, their application in the production of critical war materials has increased tremendously. Many industries throughout the country are using these resins for the first time, and those industries that have handled the resins in the past are now using them more extensively. With this widespread use of the formaldehyde resins, there has been a corresponding increase in dermatitis from this material, resulting in appreciable delays in production, absenteeism, increased compensation costs, and rapid labor turnover. An acute problem has arisen in combating the harmful effects of these formaldehyde resins.

Necessity for Control Measures

WHEN a toxic substance is essential in the manufacture of a product, the engineering and medical control methods necessary to minimize harmful exposure to the workers become an integral part of the production procedure. The aim of this article is to acquaint industry with the most effective preventive

measures that have been found to date in controlling the toxic qualities of these resins. It is hoped that the managements and employees of the plants using these resinous materials will find the suggestions practical and helpful in mitigating the difficulties associated with the manufacture of products requiring the use of formaldehyde resins.

Use and Composition of Phenol Formaldehyde

THE subject of resins and their medical complications is extensive. In order to limit this discussion to the most critical field, the information here is confined to the toxic nature of the two common formaldehyde resins, phenol and urea formaldehyde.

Of all the resins now manufactured, phenol formaldehyde is used most extensively. The available ingredients on the market for the manufacture of the resins are phenol and formaldehyde. The phenol is obtained as a coal tar distillation by-product or can be prepared synthetically. Formaldehyde is made by the oxidation of methyl or wood alcohol, obtained from the destructive distillation of wood. As in the case of phenol, formaldehyde can be prepared synthetically.

The phenol and formaldehyde are combined in the presence of a catalyst to produce the resin. An acid catalyst will produce a resin permanently soluble and fusible. The product from the acid catalyst is used in varnishes and lacquers. In the presence of an alkaline catalyst, the two principals react to form a resin which, after heat treatment, becomes insoluble and infusible, and such resins are used as adhesives and in many impregnating processes. Since this product is insoluble only after heat treatment, the phenol formaldehyde resin can be applied in the form of a soluble adhesive, and then heat treated to render the whole insoluble.

Substitution of Cresols in Resins

CRESOLS are often substituted for phenol and it is believed that, owing to the heavy current demands for phenols, the percentage of cresols in phenol formaldehyde has increased considerably. The recent severe outbreak in phenol formaldehyde dermatitis may, in some degree, be due to the cresol substitutes.

Nature and Composition of Urea Formaldehyde

IN THE manufacture of urea formaldehyde, urea is substituted for phenol. Urea resins start with coal, air and water, similar to most synthetic plastics. Coal, air and water combine to make ammonia and with the addition of carbon dioxide, urea is produced. Hydrogen, water, and carbon dioxide are combined to produce wood alcohol from which formaldehyde is made.

Melamine Formaldehyde

ANOTHER formaldehyde resin known as melamine formaldehyde is also finding widespread use. However, little or no information has been reported to date on the toxic nature of melamine formaldehyde.

Influence of Temperature and Humidity

TEMPERATURE and humidity are factors which may alter the frequency of dermatitis. Some chemical substances become irritants only when they are moist or in solution. The perspiration of the body, which often acts as a protective agent, furnishes this moisture. The perspiration is important, and varies in each individual as to the degree of acidity and the extent that it affects the solution of the irritants on the skin. During a seasonal change, such as summer, or in departments within the plant with moderately high temperatures, excessive perspiration occurs and this combined with friction produces optimum conditions for the development of dermatitis. Likewise, the use of less clothing during the summer increases the surface exposure of the skin to these irritants.

Formaldehyde Resins as a Skin Irritant

THE medical complications inherent in the use of these resins are due to the fact that phenol and urea formaldehyde are primary skin irritants. A primary skin irritant is a material which can produce a dermatitis or skin rash by its own toxic properties and needs no preliminary sensitizing agent. Though we have seen sporadic evidences of irritation to nose, throat and mouth, these are relatively rare.

Body Distribution of the Skin Rash

IN OUR investigation the incidence rate of regional distribution per one hundred patients was as follows: face 70%; sides of the neck, 73%; chest, 32%; back, 19%; abdomen, 10%; forearms, anterior surface, 72%; posterior surface, 65%; hands, anterior surface, 54%; posterior surface, 62%; legs, anterior surface, 31%; posterior surface, 32%. The body distribution of the dermatitis gives direct evidence of areas in contact with the material while working, or areas touched by hands coated with the resin. In some cases where the wood containing phenol formaldehyde is sanded and polished, the dermatitis is found wherever the fine wood dust has come in contact with the exposed parts of the body.

Description of the Skin Rash

THE dermatitis which develops from contact with phenol and urea formaldehyde resin takes the form of a fine rash and is associated with an itching sensation and a redness of the skin. The rash may then extend beyond the initially involved area. As the individual scratches, further irritation is produced which aggravates the dermatitis, creating a vicious cycle. This stage is known as the acute form of dermatitis. If the contact with the resinous material is continued, the exposed surfaces which are already irritated are further aggravated and a more severe type of dermatitis results.

Further Complications

SHOULD the worker scratch the surface too forcibly, causing breaks in the surface of the skin, a secondary infection may develop. With treatment the lesions may dry up and the individual may heal completely. If the lesions do not respond to treatment, a chronic dermatitis may result.

Resistance or Immunity to Resinous Material

SOME individuals may develop a mild or severe form of skin rash from these formaldehyde resins which later subsides. On continued contact with the resinous material, the individual will not develop a dermatitis. These individuals are referred to as "hardened" or as having developed an immunity. Should these individuals at some later period "break down" or lose their immunity and develop a severe case of dermatitis, invariably it will incapacitate the individual and force discontinuance from that type of work or any future exposure to these resins.

Normal Course of Skin Rash

THE onset of dermatitis usually occurs from three to six weeks after the initial exposure to the formaldehyde resins. The large majority of workers develop a mild to moderate form of dermatitis, which will respond to appropriate treatment. Later they may have a recurrence of the same type of dermatitis;

however, this is usually of a mild form which does not interfere with their employment.

Formaldehyde Fumes

OCCASIONALLY individuals are sensitive to formaldehyde itself, and small amounts of formaldehyde carried off from the resin will cause a dermatitis. This type of dermatitis is characterized by a puffing about the eyes and face and marked redness of the face.

Duration of the Dermatitis

THE duration of the skin rash may be from several days to a few months depending upon the severity of the lesions and the sensitivity of the worker. Afflicted employees should be under the medical care of a physician and, while at work, under the supervision of the plant nurse.

Medicated Lotions or Ointments

IN THE use of medicated lotions or ointments or protective creams, precautions should be taken to eliminate such active ingredients as phenol, menthol and any other irritating substances. Some soaps contain phenol and these should be avoided.

Prevention—Medical

PERSONAL HYGIENE: Personal hygiene, as in all cases of dermatitis control, is an important factor. While the following precautions may appear elementary, they are extremely important in the prevention program:

(a) Adequate washing facilities, conveniently located should be provided for the workers. Hot and cold running water, a bland non-irritating soap and individual towels must be available.

(b) A regular washing schedule should be insisted upon by management. This should be as frequent as necessary for the particular type of operation performed by the worker and should at least include washing before meals and on leaving the plant.

(c) In some plants showers have been installed to insure complete cleansing of the body at the end of each shift to remove any of the resinous material which may have penetrated the clothing.

PROTECTIVE CLOTHING: Protective clothing designed for the particular operation should be issued daily to the workers and cover all exposed parts of the body coming in contact with the resinous material. In most cases this protective clothing should include:

(a) Washable leather gloves with a snug wrist fit.

(b) Uniforms, smocks, coveralls or aprons of washable material allowing freedom of motion and maximum safety.

(c) Impervious sleeves made of koroseal or pliofilm or corresponding material which should fit over the wrist of the glove and extend to the upper arm. Vents can be made in the upper portion of the sleeve to aid in ventilation. These sleeves should be attached to the upper portion of the uniform.

(d) Protective clothing should be furnished by the management prior to the start of the shift or working day. In order to prevent dermatitis in others which may result from the washing of these working clothes at home, the responsibility for laundering these clothes should be assumed by the company. Lockers are an aid in insuring a complete change of working clothes.

PROTECTIVE CREAMS AND OINTMENTS: Protective creams or ointments may be applied to the face or to exposed parts which cannot be covered by protective clothing. The protective ointments used should have the following properties: They should be non-irritating and non-sensitizing and they should offer actual protection from the resinous material. The consistency should be such that they can be easily applied and removed and yet remain intact while the worker is exposed.

(a) The hands should be washed thoroughly to remove all resinous materials before applying the cream or ointment.

(b) The face should be washed before applying the cream to prevent its application on a surface which may be coated with a resinous material. Failure to wash the face and hands before applying the cream will not only nullify any preventive effect but aggravate the condition.

(c) Sole reliance on protective creams or ointments is not advisable. Protective clothing should be used whenever possible.

OPERATIVE TECHNIQUE: Proper operative technique to reduce the frequency of contact:

(a) Small hand instruments used in compressing adhesive resinous tape should be cleaned regularly and issued at the start of each shift.

(b) Sponges or wetting machines should be cleaned thoroughly and at regular intervals in order to prevent a saturation or accumulation of the resinous material on the sponge or machine.

EDUCATION: An educational program should be fostered with daily reminders in the form of posters and by nurses' instruction. Periodic instruction to each department and supervision of personal hygiene are imperative.

(a) Workers should be instructed as to proper handling and informed concerning the toxic nature of the material.

(b) Workers should be cautioned not to scratch the surface of the exposed skin, or to touch their faces with their hands or instruments coated with the resinous material. (This practice was frequently noted.)

Prevention—Engineering

THE principal engineering control measures are:

1. Enclosure of all mixing operations to prevent the dry resinous powder from contaminating the atmosphere about the worker.

(a) The mixing operators should avoid creating undue amounts of resin dust while filling mixers.

(b) Mixing operators should be cautioned not to handle the resinous powder with their bare hands.

2. Adequate ventilation at or around grinding and sanding operations on the material containing the resinous formaldehyde.

(a) Proper maintenance of ventilating equipment and periodical check-up to insure proper operation of exhaust hoods, ducts and fans.

(b) Exhaust fans should be installed with proper capacity to insure sufficient exhausting of all dust and fumes.

3. Operations which require the heating of the material containing the resin should be adequately enclosed and exhausted by means of mechanically controlled exhaust systems.

(a) Exhaust system should be of a capacity to insure frequent changes of air.

(b) Proper air intake facilities should be provided for the enclosed area to insure maximum efficiency of the ventilating system.

4. All operations requiring the heating or drying of the material should be segregated to one area of the plant in order that the fumes will not contaminate the entire plant.

(a) It is advisable to place the heating and drying units as close together as possible.

(b) When the heating operation is separate from the drying unit, an enclosed area should be provided between the two.

5. Mechanical installations should be put in wher-

ever possible in order to reduce the handling of the material and exposure to the resinous formaldehyde.

(a) A thorough study should be made of the operations of the plant with the view to confine the handling of the resinous surfaces to the least number of workers.

(b) If and where possible, mechanical equipment should replace manual operations.

6. Regular periodic removal of dust accumulation.

(a) All equipment should be wiped free of dust, preferably at the end of each shift.

(b) Clean dusting cloths should be issued at each shift.

(c) Floors and other surfaces, if necessary, should be cleaned daily, preferably by vacuum methods.

The Nurse in Industry

— Her Functions and Responsibilities —

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NURSES have occupied an important place in industry for nearly half a century, and now that the conservation of manpower is of paramount importance to our country, the nurse's work assumes an added significance. The close association which the nurse has with the workers gives her an opportunity to study first-hand the health problems involved, and to appreciate the great waste caused by illnesses and accidents. Industry as represented by management has a sincere interest in the welfare of its workers. This is apparent by the fact that at present there are more than 10,000 registered nurses employed by industry. These nurses are found in all types of manufacturing plants —in the white-collar industries such as banks, department stores, offices; transportation companies, which have in the past included railroads and airways; in the coal mining districts; in the metal industries; in the cotton fields of the South; and in the lumber regions of the North, as well as in the textile mills where the services of the nurse are still frequently measured in terms of her value to the community. She is found, in fact, wherever the physician sees the need of an able assistant.

Progress

SO THAT we may more readily understand the functions and responsibilities of the nurse in industry, we should know something regarding the progress which has influenced these activities. The workmen's compensation laws, the first of which was enacted in Wisconsin in 1911, provided great emphasis to the development of health measures. All but one of the 48 states now have such a law. In 1912 a farsighted group of men held their very first Safety Congress in Milwaukee, Wisconsin. The following year the National Safety Council was organized. The National Organization for Public Health Nursing was also organized in 1912, and in 1930 a section on Industrial Nursing was added. This section maintains close contact with all national safety activities, and participates, through an annual industrial nursing program, at each National Safety Congress. The National Organization for Public Health Nursing added to their staff an industrial nurse consultant in April, 1941. This service assumes importance from the standpoint of professional leadership, as, regardless of the field of nursing with which we are associated, the principles upon which nursing is built remain the same. In March, 1941, a public health nursing consultant was assigned to the staff of the division of industrial hygiene at the National Institute of Health, Bethesda, Maryland. This activity does much to stimulate the progress of industrial nursing on a national scale through the many contacts with industrial nursing organizations, as well as through and with the various industrial hygiene departments. The number of state health departments employing nursing consultants in the field of industrial hygiene has grown steadily, and at the present time there is a total of 18 of these nurses located in the various states.

Insurance companies have been among the pioneers in promoting public health and safety. Outstanding in its contribution to this field is the Metropolitan Life Insurance Company, of New York City, whose visiting nurse service was first established in 1909.

Employers Mutuals of Wisconsin is, to my knowledge, the only compensation insurance company maintaining a staff of nurses for the purpose of servicing industry. These nurses are located in and about 10 of the largest industrial cities. One of the many functions of the staff is that of aiding the policyholder in the selection of the nurse and assisting in the organization of her program.

Progress in industrial nursing has also advanced because of the increase in physicians in industrial establishments. Whenever you find well-trained physicians and surgeons there you will also find the nurse. A greater interest of the manufacturer in the field of prevention has created an awareness on the part of the employer as to the opportunities which he has within his own industry to increase the efficiency of the plant personnel through a well-developed medical program. Industrial hygiene has opened the doors to new methods of prevention; it requires the combined efforts and talents of the physician, the engineer, the chemist, and the nurse to accomplish the results essential to an effective program in this field. These professional persons are in a great measure responsible for the leadership manifested in this field of industrial health and safety.

Universities, also, through their public health nursing courses, have added such subjects as will familiarize the nurse in industry with industrial hygiene. All schools of nursing should concern themselves with the possibilities of the field of industrial hygiene so as to aid the undergraduate nurse in her choice of the field of nursing to which she is best fitted, so that she may more readily prepare herself.

The public health nursing curriculum guide which was prepared by a joint committee of the National Organization for Public Health Nursing and the U. S. Public Health Service, and published in 1942, provides a pattern for study and gives the teacher and student a chart by which these courses are directed.

The desired progress in nursing service in industry will come with the better prepared nurse following the demands of industry, physicians, and the nurses themselves as they recognize the potentialities of this field.

Obstacles

THERE are many obstacles which have impeded the progress of industrial hygiene, and the nurse in industry has been greatly handicapped because of them. Nurses are usually employed by lay persons, who do not understand the nurse's professional status and more frequently know little as to the ethics of the nursing profession, and less

as to the extent or limitation of her duties. She must, therefore, in many instances evaluate and plan the extent to which her services may be utilized to the best advantage of the employer and employee within the limits of her own field of nursing. The scope of her activities, in the past, therefore, has depended much upon her own training and her own resourcefulness, and no less upon the extent to which management concerns itself with the welfare of its employees. The nurse's combined activities bring valuable facts which, when brought to the attention of management, usually procure the desired results.

There has been and still remains in many sections of the country a real lack of nursing supervision in industry. The nurse who has the qualities of leadership, enthusiasm, initiative, common sense, cheerfulness, plus good health and a good background of training will through sheer interest find a way—and will seek counsel from all available sources—but many nurses, as is true of other professions, require the helpful guidance and leadership of other nurses who have had greater experience in the field. Such supervision may come from personnel available through Federal government and state councilors, insurance carriers who have qualified nurses on their staffs, and in part from local nursing agencies.

Where two or more nurses are engaged one should assume the responsibility of supervision and should be so qualified.

Medical supervision will naturally come from the physician servicing that industry, or from the chairman of the industrial health committee of the local medical society.

Physical Examinations

ENGINEERING control as it concerns the safety and welfare of the worker is not complete without medical control. The physical examination program is one of the surest means through which medical control can adequately function. In the small plants the nurse is the logical person to advocate such a program in case one is not already established. She is in an excellent position also to aid the physician in carrying out the mechanics of this program, especially so if the work is carried on at the plant. Because the information gained through a physical examination has sometimes been used in discharging employees, many workers fear the results of the examination. When the program is used for placement and for raising health standards, to the ultimate welfare of the worker, then the nurse has an excellent opportunity to advise the employee as to the benefits to be derived from such a program. When employees are sold on the idea that the examination is for the express purpose of proper placement, they are usually enthusiastic supporters. This is a real job for the nurse. She can do many things also to help the busy physician—she can take the employee's history, which should include an occupational history as well; she can do the preliminaries, such as height, weight, vision testing, urinalysis; and, with experience, she can make observations which, when passed on to the physician, will greatly aid him in his decisions essential for the purpose of placement.

Following up correctible defects which have been uncovered in the last physical examination program may be done by the nurse. Proper records are essential for the successful follow-up of this program. A tickler system is ideal, and the corrections of these defects are greatly stimulated if the nurse has had an opportunity to aid in carrying out the physical examination. Referrals to the family physician, oculist, dentist, all require considerable time and effort, and, when well carried out, exert a real influence in the development of higher standards of employee health. This lack of care for correctible defects has well been brought out in the many rejections of our young men for war duty. A tremendous amount of work is now being done to make the proper corrections. It is logical to assume that these corrections are valuable for our workers in production as well as for those in our armed forces. Because symptoms frequently reveal conditions which lead to ill health, the well-trained nurse does not wait for the employee to see his physician when he gets around to it—she follows through to see that he does.

The prevention and control of tuberculosis are effectively accomplished when the physical examination program includes studies essential to the diagnosis of the disease. The interested alert nurse brings to the physician's attention facts which may lead to early discovery, which in turn emphasizes the need for further study. In one industry a nurse referred suspicious contact cases to a specialist in this disease, five of whom were diagnosed as being tuberculous.

That which has been done for the control and prevention of this disease in industry may be done for venereal diseases as well. No physical examination program is complete without including the serological test, and, when the nurse has a complete understanding of the social aspects involved in venereal disease control, she can exert a great influence in aiding the patient and physician in the cure and control of this disease.

Authentic information as to the control and cure of cancer is available to all nurses from responsible sources. Organizations such as the Woman's Field Army of the American Society for the Control of Cancer, which may be found in any large cities, will welcome the opportunity of giving information to groups of nurses through movies, lectures, exhibits, as well as through literature.

All this knowledge which the nurse has gained through her training period as well as through her actual experiences, makes her an invaluable aid to the physician and to the public in the teaching of the importance of early diagnosis and of the fact that this can be carried out only with the help of the physician.

Activities of the Nurse

WHILE the activities of the nurse in the small plant are in a great measure dependent upon her own resourcefulness, there are other factors which should be mentioned—the type of industry, as well as the hazards involved, the geographical location of the plant, and the resources of the community in which the plant is located; as for instance, a nurse employed in an industry located in a rural community may be called upon to serve the families of that locality in the role of a public health nurse, as the greater part of the entire community population may be employed in that industry. Chiefly, however, her duties depend upon the arrangement for medical service, whether there is a full-time, part-time or physician-on-call service. The plant with the full-time physician more aptly requires the services of a well qualified clinical nurse, while the plant with a part-time physician or a physician-on-call requires a nurse with greater qualities of leadership, as she must more frequently take the initiative in the development of health and safety programs.

In the small plant the nurse interprets medical services to the employees, as the physician has little opportunity personally to contact the individual employee or the industry, his chief contact being with employees who have been injured. In many of these smaller industries

the nurse has paved the way for part-time or full-time medical service.

The nurse is usually responsible for the appearance and set-up of her department. The location, size, and layout may have been determined before her employment. She can, however, frequently improve upon the equipment through the lighting and cleanliness, all of which are most important, as the appearance of the department adds greatly to the confidence which the employees place in the medical service. Prompt and proper care of all injuries and illnesses is essentially one of the duties of the nurse, and it is assumed that here the nurse appreciates and is well aware of her limitations as well as her duties, and has made sure that she is working under medical direction. This may be somewhat complicated in a plant where the nurse works under the arrangement of a physician-on-call, but if she does not receive the cooperation of one physician-on-call, she may contact the local medical society for assistance. Most of these societies have an industrial health committee within their organization.

The care with which the simplest dressing is done creates a great impression on the employee; just as the attitude of the nurse toward the employee at the time of the treatment or call reflects itself upon the recovery of the patient. Minor accidents and illnesses frequently are not reported because of an unfriendly attitude of the nurse toward the employee while seeking treatment or counsel, or what may be, to the nurse, a trivial injury or complaint. To the employee none of these is trivial. He seeks the nurse's aid and counsel and is guided by her opinions and suggestions. If she is cheerful, calm, and courteous in her attitude toward him and his problems, her services become invaluable and she has gone far in creating good will not only for her department, but also for the entire organization.

Standing Orders

IT IS THE duty of the nurse to obtain written standing orders by a physician familiar with the industry in which the nurse is employed, so that she may receive the proper guidance and protection for herself and her profession, as well as the protection of her employer and the employees.

These orders do not take the place of good judgment on the part of the nurse and may require additions and deductions according to the hazards of the industry, as frequently changes in manufacturing processes occur because of new chemicals or new processes. Wisconsin and Mississippi are the only states to my knowledge in which the state medical societies have interested themselves in setting up a pamphlet which may be used as a guide in standing orders.

These, however, do not take the place of standing orders for any given plant.

Accident Prevention

WHILE actual participation in the safety program may not seem a special function of the nurse, yet in the small industries many programs have been fostered and developed through the plant's nurse's encouragement and stimulation. Plant surveys are a common practice and are approved as an activity conducive to good industrial nursing, as, unless the nurse is familiar with the products manufactured and the hazards involved in these processes, she cannot intelligently carry on her duties, nor can she visualize the employee's description of an accident. These are important factors in the fostering of the proper relationship between the nurse and the employee, especially in the smaller industry. This background of activity makes the nurse a valuable aid to the safety committee. Serving as secretary of that committee, she is given an opportunity to pass on information advantageous to management and to employees.

Plant surveys by the nurse also lead to improved sanitary conditions, as toilet and rest rooms are frequently neglected and proper facilities for drinking water are often lacking. When these are called to the attention of management by the nurse, improvements are inevitable. Ill effects of improper ventilation and illumination are brought to her attention through these surveys, and through individual complaints and comments as well as through the personal visits of the employees. The fact that the nurse is familiar with the plant working conditions makes for a greater respect for her judgment on the part of the employees.

These surveys are not always acceptable nor are they necessary in plants carrying out a well developed industrial hygiene program. However, as the greater number of our industries are small, and as it is these industries in which the nurse more frequently works alone, I am stressing the importance of activities which are conducive to good industrial nursing in these smaller plants.

Nursing Services Outside the Plant

THE service which can be given to ill employees in their homes is a valuable one. In a busy industry it is difficult for the nurse working alone to leave the plant for such service for any length of time; therefore, this is considered a special function for an extra or an outside nurse. Many plant welfare organizations maintain such a service, and many industries use the services carried on by Visiting Nurse Organizations. This service may also be provided by the insurance company carrying their group health insurance. In either case there should be close contact between the field and plant nurse. Otherwise much of the benefit is lost, especially that elusive one which aids in the development of good will.

Calling on employees who are hospitalized is frequently neglected. This should be a "must" on any nurse's calendar, as only those who have had the experience or the close contact with workers who are confined for any length of time to their homes or hospitals can appreciate the feeling of belonging at receiving a call from the plant nurse, and the feeling of neglect which comes through this oversight. Arrangements should be made to relieve the nurse for sufficient lengths of time so that these calls may be carried on. I feel that this function has a direct influence on the worker's recovery. If you could see as I have the look of pleasure which comes over the employee's face when I am able to relate a bit of plant news to him, or, when possible, tell him that I have made the call at the special request of the plant nurse or the plant superintendent, you would indeed feel well repaid for the effort.

Health Education

MUCH of the health education which is carried on in industry is through informal discussions, usually at the time an employee is reporting an injury or a complaint. Most nurses are accustomed to teaching. In an industry one has an opportunity at every turn to satisfy that ambition. Thus, for instance, the employee may reveal through his conversation that he thinks respirators are useless. Assuming that the nurse knows the conditions under which the employee works and the reason for the needed protection of the respirators, she is given an opportunity to explain to him the purposes of this form of protection. It may be also that she learns that the respirator has not been kept clean, which gives her an opportunity to pass on to the super-

visor or the foreman the importance of carrying out a cleanliness program for respirators. This example may seem to you who are privileged to work in highly organized industries to be an impossible one, but such I assure you is not the case. Poorly cared for respirators and poorly cared for goggles are far too common complaints in many industries and wherever nurses are employed; this condition should not be allowed to exist.

Health education is not to be restricted to the employee. Management frequently presents the greatest problem, chiefly through the lack of correct information.

In a recent talk to a group of industrial nurses and personnel directors, the president of a successful industry commented upon the excellent work which the nurse in his plant had accomplished. He added to this the fact that the nurse had consistently and persistently brought his attention to the need for an improved medical program, the need for a program to aid in reducing lost time, and other suggestions, all for the purpose of improving the present arrangement. All this has now been accomplished, but the president added with a twinkle in his eye, "This was brought about through the nurse's tact and diplomacy, as no one, not even the president, wishes to be thought lacking in vision."

The teaching of accident prevention should extend itself outside the industry to the home, and this many nurses do—through bulletin boards, literature (a great amount of which is available today), personal contact with the employee, and through the visiting nurse, where one is employed.

Inability to adjust everyday problems and associations may be one of the early symptoms of a serious mental disorder, and, so that the nurse may teach and inform, she must have a knowledge of the availability of information pertaining to the subject. She may also teach through example and through the knowledge of the great need of each individual for sincere appreciation. This is no small part of the opportunities for teaching which lies at the door of every nurse in industry.

According to Mary Anderson, Director of the Woman's Bureau, U. S. Department of Labor, there are 14 million women workers in industry today, three million on actual war jobs, and these numbers are increasing daily. There are still many industries, and perhaps nurses, too, who have not been aware of the many things the nurse can do to make for safer and healthier work habits of the women employees. Many of these women are housewives who have had no previous training in factories. Many lack work experience. Much teaching and training are required to bring these new women employees to accustom themselves to plant environment and good working habits. Where well-trained counselors for women are not made available, the services of the nurse should be utilized for teaching purposes in connection with such items as proper working attire, personal hygiene, pregnancy health habits with special attention to nutrition, necessity for prompt medical attention for illness and injury, and, if it is possible for the nurse to arrange a conference, even though brief, with the woman employee the day she is hired, many of the handicaps pertaining to employment of women will be lessened.

Records and Reports

NURSES frequently ask, "Why should we take the time to make out reports; no one ever looks at them?" If records served only for the purpose of evaluating the nurse's activities, they would have well served a useful purpose. However, there are many other reasons why records should be kept, the most important of which is to keep management informed as to activities of her department, as, unless it is so informed, it may not be aware of the benefits which are being derived from the nurse's activities. Because of compensation laws, records of industrial injuries and illnesses are more complete than those of non-industrial origin, since they aid the employee in obtaining just settlement of claims, as well as protecting the employer against malingerers and dishonest claimants.

Records are also a barometer of the preventive and curative work carried on in the given industry. The choice of a definite system will vary with the needs of the plant and with the vision of the nurse. The system set-up should be simple and accessible. Daily recording of all calls can be simplified for analysis. Individual records for all employees are important for the purpose of comparison and place emphasis on the "repeaters." These records serve as invaluable guides in planning for correction and improvement. Monthly and annual reports to management are important. Frequent repetition of an incident or an event may be necessary to bring to management's attention much needed corrections of plant hazards.

These records should be followed at times with personal conferences, which aid in keeping records alive and are frequently beneficial to the nurse for the promotion of herself and her department. They also may provide a means for the favorable publicity for the work of an individual employee or of a committee. We must keep in mind the fact that records in themselves take considerable time, and that in many industries clerical assistance in the keeping of records is essential, so as to give the nurse sufficient time to spend on her actual nursing problems. It is important for the nurse to keep in close touch with the assistants who help with the records.

Many activities may be included in the nurse's program which have not been noted in this paper—control of absenteeism, control of dermatitis, rehabilitation, and many others.

Dr. Stanley Seeger, Chairman of the A. M. A. Council on Industrial Health, describes in far better words than I can the reason for the great variation in the activities of the industrial nursing program:

"In large plants with full-time medical direction, the duties of the nurse are largely clinical duties, and the scheme of organization of the establishment will define her ethical relationship with the physician. In the small plants the nurse will find that a restriction of her duties to the clinical type of service will not justify her employment. Well-understood and well-defined medical contact and supervision are most needed in this particular field. If the physician's concept of industrial nursing is based purely on ideas of clinical nursing obtained in hospital practice, the nurse will find it difficult to fulfill all of the possibilities in the industrial field. In order properly to develop the possibilities of nursing service in industry, the nurse should be trained in sanitary requirements, health control, safety supervision and recreational programs, as well as the safeguarding of conditions connected with eating facilities. Her value in the small plants is proportional to her ability to take responsibility for other than usual clinical activities.

"The development of nursing service in the smaller industries has taken place because of the need for such service. The majority of these nurses have been employed through non-medical personnel management, and there is definite need of establishing the proper liaison between the medical profession and the nurses now engaged in small indus-

tries with little medical supervision."

My observation of present nursing service in industry leads me to believe that it is every nurse's responsibility to consider nursing distribution in industry to a greater degree than we heretofore have, thereby releasing more nurses who are eligible for war service. In the smaller industries it is important that a well-trained and experienced nurse be retained. When additional nursing care is needed, nurse assistants may be added to be trained and supervised by the nurse in charge.

Many of the various duties which are now carried out by the nurses in the plants can well be carried on by these trained attendants, giving the trained nurse more time for the essential activities.

In brief, to summarize this paper, I should like to call your attention to the fact that the first responsibility of the nurse in industry is the care of the worker. The activities which she carries on to gain that objective depend upon many factors previously mentioned, but chiefly upon her own preparation, resourcefulness, cheerfulness, and her ability to work well with people. The U. S. government informs us that sick and injured war workers lose six million work days each month. Any activities the nurse performs which will curtail this loss is a direct contribution to our fighting forces, and the nurse in industry is daily making this contribution.

The First Aid Corps

—Consolidated Vultee Aircraft Corporation, Nashville, Tennessee Division—

CARRINGTON HARRISON, M.D.,
Medical Director

IN DECEMBER, 1941, I received a request from the management of Vultee to organize a First Aid Corps for the purpose of protection of personnel of the plant in the event of a bombing attack or sabotage.

Questionnaires were made available to all employees as follows:

FOR THOSE INTERESTED IN JOINING THE CONSOLIDATED VULTEE FIRST AID CORPS

NAME:..... DEPT..... SHIFT.....
Have you had any formal training in First Aid Work? Boy Scout.....
Red Cross..... Other.....
Where did you last receive First Aid Training?.....
.....
Have you had occasion to use this First Aid Training? If so, how?
As a private citizen.....
As a First Aid attendant.....
Remarks: .....

A very gratifying response was obtained from the questionnaires showing which interested individuals were best qualified to serve in the First Aid Corps. We picked as a nucleus only those who had had extensive training in such work especially concentrating on those who actually had used this training in positions elsewhere.

Among the volunteers whose qualifications seemed suitable there were three bona fide Red Cross first aid instructors in good standing. Those volunteers whom we chose to form the nucleus of the organization were brought together in a series of meetings. The purpose of the Corps was outlined to them. They were divided at first into 10 squads, each squad being assigned a zone in the plant; the squad for any particular zone as far as possible was composed of persons who ordinarily did most of their work in that area.

Next the question of equipment was considered. Each zone was assigned its own first aid post which was equipped with a first aid kit, a stretcher, blankets and splints. Contents of the first aid kit are as follows:

Scissors; 3 in. gauze bandage; 2 in. gauze bandage; 2 in. adhesive; 1 in. adhesive; ampule ammonia; merthiolate; sulfathiozole ointment; butesin picrate; black rubber hose 2 ft. long; eyecup; eyewash; gauze packs; sterile towels; wooden splints; triangular bandages.

When the equipment was ready we called separate meetings of each squad for detailed explanation of the use of the various articles and for restatement of the general purpose of the First Aid Corps as follows:

The Corps is *not* concerned with the treatment of minor injuries occurring during the course of work; it is concerned only with those industrial accidents of such severity as to require "on the spot" care before the physician arrives; it is principally concerned with life-saving measures necessarily applied during that interval between the time of injury and the arrival of the physician; it is also concerned with transportation of the injured. The most important function of the Corps would be to give first aid treatment as above to large numbers of severely injured in the event of an outside emergency such as a bombing attack or sabotage. Of course this was the original purpose of organizing the Corps. However, its secondary function has assumed increasing importance, such as administering necessary "on the spot" first aid measures to the severely injured during the ordinary course of work. Detailed instruction concerning the use of materials at the first aid post were given the squad members during the initial meetings as follows:

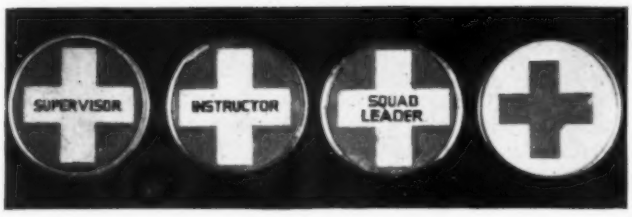
1. Rubber hose tourniquet—to be used in the event of hemorrhage in an extremity. Method of application and degree of tension shown and practiced.
2. Antiseptic solution—to be used for cleansing the hands of the first aid worker before dressing a wound. Not to be applied to the injured in any case.
3. Sulfathiozole ointment 5%—to be applied to abrasions and for burns only when professional medical attention cannot be secured promptly.
4. Ammonia—to be administered as an inhalant to those feeling faint *after they have been made to lie down.*
5. Eyecup and boric acid solutions—to be used to wash out eyes injured by burning or by chemicals.
6. Gauze packs and sterile towels—to be used as:

(a) dressings over which pressure can be applied to control hemorrhage in wounds of the trunk or in other locations where a tourniquet cannot be used.

(b) dressings for extensive wounds.

7. Wooden splints of three sizes—one for the lower extremity, one for the upper extremity, and one for the forearm and hand—to be applied for immobilization of injured extremity.
8. Triangular bandages, adhesive tape, and roller

First Aid Kit



Insignia

gauze bandage—to be used for holding dressings or splints in place. Splints must be fixed at three points in each instance.

9. Bandage scissors—use obvious.

10. Stretcher—the severely injured are to moved only at direction of a physician except when there is danger of further damage in the locality where the injured person is found.

11. Blackout flashlights—special flashlights prepared for use in blackouts.

The members of the First Aid Corps were thoroughly impressed with the fact that they were to give assistance only to:

1. The severely injured:

(a) those needing artificial respiration.
(b) those in whom hemorrhage is occurring.
(c) those in shock or coma.
(d) those with fractures.
(e) those with extensive wounds and burns.
(f) those requiring stretcher transportation which include all of the above and certain other less severely injured persons in whom ordinary "fainting" has occurred or is feared.

The importance of not moving the severely injured except at the direction of a physician was stressed; the importance of knowing how to handle and use a stretcher when directed to do so by the physician was also stressed.

First Aid Post

WITH these basic ideas of organization and function clearly established the First Aid Corps has progressed along several lines during the past year.

The Red Cross first aid instructors, three in number at first, have shown great interest and cooperation in furthering the aims of the First Aid Corps. They agreed to teach classes for employees desirous of joining the Corps. The management agreed that these classes could be taught on company time until the Corps was brought up to the desired strength. Accordingly classes in standard and advanced Red Cross first aid have been held for employees on all three shifts from time to time during the year, with the result that we now have some 250 members who hold standard first aid cards. In other words, in the Corps there are 250 individuals who have had from 20 to 30 hours of formal intensive training. In order to remain in the Corps members must maintain their standing with the American Red Cross.

Members of the Corps are designated by a round white badge centered by a red cross. The white section of the badge is covered with fluorescent paint in order that the members can be identified in a blackout. Squad leaders, supervisors, and instructors wear a red badge centered by a white cross with their title painted in black across the cross. In this case the cross is painted with fluorescent paint.

Increasing clerical and organizational work for the growing corps necessitated appointment of a corps supervisor, one for each shift. These men are chosen exclusively from workers in the shop as distinct from office workers. They coordinate the work of the First Aid Corps and explain its function to the plant at large. Each has a clerk available for dictation and other clerical work necessary in the integration of the Corps.

The management of the Corps has been turned over to these supervisors in large measure. They are responsible directly to the medical director of the plant and have frequent conferences with him, especially on questions of policy that arise from time to time.

The First Aid Corps was held together for the first several months by the mere fact of organizational meetings and later by the scheduled first aid classes. However, when the desired number for filling the Corps had been trained and the organization was complete, it was then necessary to provide regular meetings of some sort in order to keep the organization intact in its various phases. Accordingly a system of meetings was effected whereby each squad has a meeting once every two months; each meeting consists of two squads conducted by the respective squad leaders and the supervisor of the particular shift. Also a squad leader

Post Equipment

meeting is held once monthly. All these meetings are held on company time. In addition to this a so-called Red Cross Detachment has been formed by the members of the First Aid Corps of their own volition. This detachment holds monthly meetings outside the plant. Such regular meetings are necessary to the maintenance of an organization of the present size of the First Aid Corps.

Specific detailed plans are in effect concerning the possible use of the First Aid Corps as a whole in the event of an extensive emergency.

Each Corps member is given a copy of these plans which are as follows:

ACTUAL use of the Corps in severe accidents arising out of routine work during the past year:

Since inception of the First Aid Corps, its members have been largely responsible for saving the lives of at least three employees by immediate use of proper procedure in severe accidents.

An employee who suffered a compound comminuted fracture of the humerus just above the elbow with complete division of the triceps muscle was bleeding profusely from the large wound of his arm. Within three or four minutes a member of the First Aid Corps who had been summoned, had applied a tourniquet effectively, thus preventing a dangerous loss of blood.

A Description of the Emergency Medical Facilities for the Handling of Large Numbers of Casualties at Nashville Division of Consolidated Vultee Aircraft Corporation

I. First Aid Posts—Casualty Stations—Transportation Centers.
   1. First Aid Posts and Equipment.
   2. Casualty Stations and Equipment.
   3. Transportation Centers.
      1. First Aid Posts:

There are 10 First Aid Posts scattered throughout the plant. The locations of these are attached.

The equipment at the First Aid Posts is attached on a separate sheet (all items named except wooden splints —are contained within the First Aid Kit at the post. The splints are located in brackets just adjacent to the First Aid Kit). In addition each post is equipped with a stretcher and blanket.

2. Casualty Stations:

These points have been designated as Casualty Station:

(a) Emergency Hospital
(b) Room No.....
(c) Shop No.....

The present equipment of the Emergency Hospital is adequate for use in this location in the event of an emergency.

The equipment for the Shop No..... and Room No..... consists of two Physicians Kits, photographs of which are shown. This equipment would be augmented by material brought in by any outside Physicians Squads on whom we might call for help.

3. Transportation Centers:

The .....Gate, the.....Gate and the..... Entrance have been designated as points of exit for patients so severely injured that they must be hospitalized.

The.....Gate has been designated as the point of entrance to the plant of any outside medical help called for.

II. Personnel:
   1. Professional Personnel.
   2. Vultee First Aid Corps.
   3. Ambulance Facilities.
      1. Professional Personnel:

The Professional Personnel consists of:

(a) Plant Physicians and Nurses
(b) Squads of Physicians and Nurses from the Nashville Civilian Defense Organization.

IN THE event of an emergency in which casualties are expected the plant physicians will be notified and will immediately proceed to the plant and take charge of the emergency medical facilities. They will call to duty any needed additional nurses of the Vultee Emergency Hospital Staff. They will also ask the Office of Civilian Defense for one or more of that organization's squads of physicians and nurses. These outside squads of medical help will proceed to the.....Gate where they will be met by members of Vultee First Aid Squad Number 11. Each outside medical squad will then be conducted to one of the Casualty Stations (as designated by the plant physician) by two members of Vultee First Aid Squad—Number 11; these two members of the First Aid Squad will remain with the outside medical help as long as these physicians and nurses are in the plant. When the emergency is over the outside medical help will again be conducted back to the.....Gate by the same two members of First Aid Squad—Number 11.

The function of the outside Physician's Squad will be to render all necessary measures to injured persons brought to the Casualty Station to which the particular Physician's Squad in question has been assigned; when necessary treatment has been completed an identification tag will be filled out by the physician in attendance and tied to the patient. The patient will then be transported on a stretcher by members of First Aid Squad—Number 12, to the nearest transportation center where an ambulance will be waiting. The ambulance drivers will take the patient to the hospital designated on the patient's identification tag.

If for any reason it should become necessary for any member of the outside Physician's Squad to go to some point in the plant other than a Casualty Station, a member of First Aid Squad—Number 11, must be in attendance with that physician constantly.

2. Vultee First Aid Corps:

The First Aid Corps is divided into a total of 30 squads for the three shifts with approximately eight members to a squad. Each squad is assigned to one of the First Aid Posts as outlined above. In the event of the sounding of the alarm denoting an emergency, members of the First Aid Corps will proceed to the First Aid Posts assigned to them. From these posts they will first, render first aid to the injured and then will proceed to transport the injured on stretchers to one of the Casualty Stations: all patients will be carried to the Emergency Hospital unless the squad leader receives word to transport patients to one of the other Casualty Stations.

The telephone nearest each First Aid Post should be reserved for use of the First Aid Squad in the event of an emergency. The plant physician can be located at either Extension.....or.....and should be kept informed as to the severity of accidents encountered.

Outside help (physicians and ambulances) will be summoned by the plant physician alone. No outside help is to be summoned by members of the First Aid Corps. The duty of Squad 11 will be to meet outside medical help at the .....Gate, conduct this help to the Casualty Station designated and remain with these outside physicians and nurses as long as they are in the plant.

The duty of Squad 12 will be to assist the outside medical help in the Casualty Station and to transport patients from the Casualty Stations to the ambulances.

Squad 13 will be under the supervision of a Red Cross First Aid instructor and will act as a liaison squad for five of the First Aid posts.

Squad 14 will be under the supervision of another Red Cross First Aid instructor, and will act as a liaison squad for the remaining First Aid posts.

3. Ambulance Facilities:

There are roughly.....ambulances available for use in an emergency. Upon request by the plant physician to the Office of Civilian Defense, any desired number of these ambulances will immediately proceed to this factory. These ambulances will remain outside of the plant grounds at one or more of the Transportation Centers as designated by the plant physician. Their function will be solely to transport patients from the plant to the hospital.

Another employee suffered a compound comminuted fracture of the tibia, fibula and astragalus with an extensive wound of the leg and division of the posterior tibial artery. The prompt application of an effective tourniquet in this man's case was distinctly a life saving measure.

Another employee became trapped beneath a heavy weight which pressed on his chest, head, and face. Five or 10 minutes were required to extricate this man; the supervisor of the First Aid Corps on the second shift had been notified meanwhile and had arrived at the scene of the accident. The patient was deeply cyanotic when extricated and had a comminuted fracture of the mandible with tear of the buccal mucous which was bleeding actively. The supervisor immediately placed the patient on his abdomen on a stretcher, allowing the tongue to fall forward and blood in the mouth to run out. The patient was comatose and very wild and active. He was kept in the proper recumbent posture with main force by the supervisor and was transported on the stretcher to the plant emergency hospital. Had he not been properly treated on the spot, in light of the deep cyanosis existing when he was extricated, this man would surely have drowned in his own blood.

There have been numerous other less severe but serious cases whose early recovery has been greatly advanced because of the proper application of first aid treatment by members of the First Aid Corps. The morale of the Corps and the respect of other employees for the Corps has steadily increased because of these incidents.

The First Aid Corps is a part of the medical department and is responsible for its actions and duties only to the medical department. In the event of accidents no one except members of the First Aid Corps may treat or transport the injured. Furthermore, members of the First Aid Corps are in complete charge of injured persons and take orders concerning the injured only from the medical director or plant physician. It is very necessary to establish these rules and enforce them, else interference will come from plant foremen or plant supervisors of the particular area in which an accident occurs; once these men are made to realize that the responsibility of care of the injured belongs not to them but to the First Aid Corps they are quite willing to cooperate. The plant at large must be educated along these lines to prevent friction and to insure the principle that trained members of the First Aid Corps and these alone will deal with the injured.

The First Aid Corps is composed entirely of workers, both office and factory. There are no men in the organization who devote their full time to the Corps. The supervisors of the Corps have informal arrangements with their foremen allowing them to spend a certain amount of time in the organizational work necessary to continued maintenance of the Corps. The amount of time so spent depends largely upon the foremen in question. This arrangement has worked out quite satisfactorily and serves to keep the First Aid Corps in the hands of the workers themselves. The Corps' progression and success are probably largely due to the fact that it belongs to the men who compose it—a fact of which the employees are aware and in which they take great pride.

IN ADDITION to the specific functions and activities of the First Aid Corps as outlined above, the value of the Corps extends also into related fields. It can be well utilized as a nucleus from which to disseminate information on public health and hygiene to the plant at large. The Corps can also be coordinated with the safety program: a wrecking crew has been established in the safety department consisting of men skilled in the use of the heavy tools needed in clearing up fallen debris which might trap the injured. Equipment for this crew is maintained in three central locations and is available for immediate use. The safety director has delegated authority to all First Aid Corps members to correct and/or report any unsafe conditions recognized by these members; all First Aid Corps squad Leaders have also been made official members of the wrecking crew and wear badges indicative of this. Thus, *prevention* (safety department) and *cure* (medical department) meet on common ground in the substance of the First Aid Corps.

Follow-Up on Cholecystectomy

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WHEN a patient accepts the decision that it has become necessary to remove the gall-bladder in order to relieve indigestion, discomfort, pain or jaundice, it is only natural that he should assume the condition will be entirely corrected in a matter of a few weeks and the routine duties of life can be taken up again without curtailment. However desirable this state of affairs would be, one can never state with complete assurance that such will be the case, because in a certain percentage of patients who undergo cholecystectomy the disability continues or recurs. Under proper conditions of diagnosis, pre-operative management, operative technique and postoperative care, good results can be expected in 90% or more of the cases in which cholelithiasis is part of the pathologic picture. If gall-stones are not found at operation, it has been my experience that good results cannot be expected in more than 70% of the cases. In chronic cholecystitis and cholelithiasis where malignancy is not a factor, routine cholecystectomy, either with or without opening the common duct, should not carry an operative mortality of more than 3%. The mortality factor will not be discussed in this paper.

Continued disability after cholecystectomy readily falls into one or more of three groups, namely, (1) incorrect diagnosis; (2) co-existing disease; (3) factors associated with an operation upon the biliary tract.

An incorrect diagnosis can usually be attributed to the lack of complete pre-operative gastro-intestinal study, misinterpretation of symptoms which have arisen from disease associated with the heart or kidney, or incomplete exploration at the operating table. A complete pre-operative gastro-intestinal study should include the cholecystogram, gastric analysis, stomach and colon x-rays, for not too infrequently hyperacidity or hypoacidity, peptic ulcer—especially of the posterior type penetrating into the pancreas, or a spastic condition of the stomach or colon will be found to account for the symptoms suggesting biliary tract disease. If the cholecystogram portrays a normal functioning gall-bladder with no visible stones, and if the patient complains more of a vague indigestion or some right upper abdominal discomfort than of true biliary colic, medical treatment for biliary dysfunction should be given a thorough trial because it is probably easier to manage the patient with a gastro-intestinal disorder who still has his apparently normal gall-bladder than it would be if the gall-bladder were removed and such complications as adhesions, hernia and the psychic phenomenon entered the picture. In the event that x-rays do reveal gall-bladder dysfunction, such as poor filling or emptying, but there is no

evidence of stones, no history of true colic or pain and no history of jaundice, chills or fever, again one must not be too zealous in forcing the issue of cholecystectomy without first attempting a medical regime. On the other hand, if there is x-ray evidence of normal gall-bladder function and the cardiac, renal and gastro-intestinal systems are negative, but the patient does complain of definite biliary colic, cholecsystectomy should be advised and with quite high assurance that it will be successful. According to Carter, Green and Twiss,[6] there is a 5 to 15% chance that stones are present in the gall-bladder even though they are not visible on the normal cholecystogram.

Foss and Lillie[7] have properly stated that one must seriously question the statistics showing that 30 to 40% of gall-bladders removed were of the non-calculous type, even though the reported mortality of 1 to 2% is impressive. They believe that many of these operations are performed because of symptoms rather than because there are definite pathologic processes which would justify cholecystectomy.

In the realm of surgery, when an error, either avoidable or unavoidable, results in the patient undergoing a surgical procedure, not too infrequently the patient is tagged a "neurotic" because he has not improved, and he usually has a rather stormy future.

When co-existing disease or pathology accounts for the continued disability, as in the second group, the disability period could be definitely shortened by a more complete study and examination of the patient before cholecystectomy is done. Only recently, thorough pre-operative check-up of a patient revealed both cholelithiasis and renal lithiasis. No doubt this individual had disabling symptoms from both the biliary and urological tracts but because the problem could be discussed with the patient and the necessity for two operations explained, a later embarrassing situation was avoided. Any co-existing condition, whether peptic ulcer, cardio or pylorospasm, acid imbalance, spastic colon, hepatitis, pancreatitis, or other gastro-intestinal disturbance, must be corrected or the surgical treatment of biliary tract disease will be criticized when the failure should rest only in incomplete diagnosis. The element of neurosis applies here as in the first group.

The third group deals with factors associated with the operation, and our most consistent sources of trouble seem to be the following: permitting stones to remain in the common duct, dysfunction of the choledochal sphincter (spastic biliary dyssynergia), incomplete removal of the gall-bladder, post-operative hernia, biliary fistula, postoperative stricture of the common duct, or disturbing adhesions.

Taking up these points in reverse order to their frequency, one may state that following cholecystectomy, adhesions giving rise to marked distress or disturbance of digestion are unusual, although until the last 15 years our knowledge of biliary tract physiology and pathology was not so complete and we were very prone to ascribe the complaint to adhesions. Now we have had ample reports and proof to make this pathologic entity rather insignificant.

Operative injury to the common duct which causes complete obstruction usually gives a very clear picture with gradual and steady increase of jaundice beginning several days following operation. The decision that operative interference is necessary to establish biliary-intestinal anastomosis can be made rather readily and early. Incomplete stricture due to partial narrowing of the common duct from operative trauma, or the slowly progressing inflammatory stricture, present a later onset of jaundice which may or may not be progressive. However, with jaundice of mild to moderate degree and with sufficient bile in the stools for proper digestive function, we are still dealing with an individual who may be partially or completely disabled. The patient is dissatisfied with his icteroid tinge and regardless of whether discomfort or pain is present, he is not quite as presentable to society when public contact is necessary for the elaboration of his duties, and self consciousness alone may prevent him from desiring to return to his work. Of course there are patients with a permanent icteroid appearance who carry on their work normally (and that is as it should be). The attending surgeon is usually rather hesitant about forcing early operation for incomplete stricture, and rightly so, for not too infrequently if inflammatory edema alone is causing the stricture, the condition will correct itself. Also, what is assumed to be a stricture from the clinical picture occasionally proves to be a small stone which may or may not make its exit through the sphincter area at the lower end of the common duct. Unless the jaundice is definitely progressive or pain is a prominent factor, it is my belief that these patients should be observed for three months at least. The three-day biliary flush regime, repeated every two weeks, improves the condition in a percentage of these patients and in some instances affords complete temporary or permanent relief. The thin bile washes through the narrowed area much easier and may remove collections of mucus, thickened bile or a small stone from behind the stricture. Local hot packs and restriction of activity are beneficial in decreasing any inflammatory edema.

A secondary operation for probable stricture having been advised and some type of biliary-intestinal anastomosis planned, one must face a mortality rate of 10 to 15%. The reported incidence of secondary cholangeitis following anastomosis of the common or hepatic duct to the gastro-intestinal tract varies. It has occurred in my own experience and, in an attempt to avoid this complication, it has been my routine procedure during the last three years to advise the three-day biliary flush regime. Under this regime the bile is thinned out and forced through the biliary tract under increased pressure. The patient is specifically directed to take the flush the first three days of each month and to repeat it at any time in the interim that he begins to feel bilious. My experience with this has been very gratifying. Several patients who were apparently incapacitated after the gastro-intestinal anastomosis were sufficiently relieved that they could carry on their work.

A biliary fistula in most instances is associated with obstruction of the common duct or sphincter area by stone, spasm, stricture or tumor. There may be partial or complete discharge of bile through the fistulous tract. If there is a copious discharge of bile through the tract at the end of three weeks following a biliary tract operation, a cholangiogram should be taken by injecting 20 to 30 cc. of an organic iodide contrast medium, such as hippuran or diodrast, and one should be guided by the cholangiographic findings. A fair percentage of these fistulas, when due only to spasm or slight narrowing in the ductal region, will clear up under the flush regime. In such instances, one must pack the tract for at least part of each day. A copious discharge of bile through a fistulous tract usually precludes an individual from carrying on his duties.

A postoperative hernia may be a serious disability, and, although I have not seen many of them following cholecystectomy, my general rule is to advise early repair, particularly when the hernia is small. It is comparatively simple to repair a small incisional hernia with silk two to four months after operation, the results are usually excellent and the mortality negligible. If one waits until the hernia gives subjective trouble

and has become very large, greater difficulty is encountered at operation, the mortality is inevitably higher, there is less chance of complete and permanent cure, and a longer period of disability follows. After satisfactory closure of the small hernia by an overlapping procedure with non-absorbable suture material, the average patient can be back in his routine in three or four weeks, even though it is of a rather strenuous nature.

Although very few surgeons have been impressed with the frequency and size of "re-formed" gall-bladders since the scholarly discussion of this matter by the late H. L. Beye[5] in which he reported that it was discovered in 14 (21.2%) of a total of 66 secondary operations on the biliary tract, I was greatly impressed this last year when as a guest at Iowa City I saw several "re-formed" gall-bladders. On this particular day, Dr. Peterson removed a completely re-formed gall-bladder from a patient on whom Dr. Beye had previously done a cholecystectomy. Fortunately the specimen from the first operation had been preserved and could be compared with the fresh pathological specimen from the second operation. Probably these figures are higher than is generally accepted, but if the area of the stump of the cystic duct were more closely examined when secondary operations for common duct stones are performed, this could be substantiated.

During the last six years in discussions on the spastic state of the choledochal sphincter,[3] cholangiograms have been presented which reveal various phases of this definite clinical entity of spastic biliary dyssnergia. Although early in our experience a report was made of one case in which spasm of the choledochal sphincter was so complete as to cause complete lack of bile in the stool over a period of 30 days, we were slow in fully appreciating how closely it simulated common duct stone. Delayed cholangiograms and intraductal pressure studies[3,4] are convincing demonstrations, however. This is particularly true after a few cases have been re-operated for common duct stone and no evidence found of stone, stricture, tumor, mucous plug or blood clot blocking the common duct, even though the history of extreme pain and colic with jaundice or chills and fever indicated such pathology. As in previously discussed cases, adequate attempts should be made to manage the condition conservatively. First co-existing disease should be ruled out, particularly penetrating peptic ulcer and urinary lithiasis. Then if repeated biliary flushes, antispasmodics, smooth diet and hot packs fail to bring about improvement, re-operation becomes necessary. The common duct should be thoroughly explored and, if no stone is found, a T-tube should be placed in the common duct and left for some three to 12 months. However, the patient can probably return to his work some four to six weeks following operation, permitting the bile to drain into a small container attached to the T-tube, or keeping the T-tube clamped off during working hours. After two months have elapsed, the tube may gradually be clamped for longer periods. From this one can judge when the tube can safely be removed. There should be no hurry, and probably it would be safer to leave the tube in for at least six months. Before it is removed, it should have been clamped off for at least three weeks, without being opened for drainage. On one occasion, I removed a T-tube after a two-month period and after it had been closed off for two weeks with no symptoms of pain or colic, only to have the pain, colic and jaundice recur within one month. This necessitated a third operation and re-exploration of the common duct again confirmed our diagnosis of no common duct stone. I doubt if the incidence of finding no stone in the common duct upon re-operation has been sufficiently reported. Foss and Lillie[7] stated that in 22 (66.6%) out of 33 re-operations, no stone was found in the common duct. Stated otherwise, this is only 33.3% having stones present at secondary operation. I have performed secondary operations on 24 patients, on whom the cholecystectomy had been done by myself or elsewhere, and have found that stones were present in 15 or 62.5%. This does not include re-operation in cases of malignancy or stricture. It has been my observation that with biliary dyssynergia, patients begin to have their recurrent attacks of pain, colic, jaundice, or chills and fever within a few weeks after operation.

Remaining common duct stone is the most common cause of disability following cholecystectomy. Mucous plugs, blood clots, collections of inspissated bile and debris may give rise to similar symptoms. The source of stones in the common duct following cholecystectomy provokes some interesting speculation. My own opinion, based upon supposition from experience and meager reports from the literature, is that these calculi result from the following causes and in about the following order: (1) stones overlooked at the first operation; (2) hepatic duct stones reaching the common duct following operation; (3) secondary formation of stones; (4) stones dislodged from the gall-bladder into the common duct during operation.

In opening the common duct, certain criteria must be followed. I usually perform choledochostomy under the following conditions: (1) if there are palpable stones in the common or hepatic ducts; (2) when there is a history of jaundice; (3) if multiple small stones are found in the gall-bladder; (4) if the wall of the common duct is dilated or thickened.

The higher the percentage of stones in a series of gall-bladder cases, the oftener one should explore the common duct. About 90% of my cases have shown stones in the gall-bladder, and, although at one time I was opening the common duct in 45% of these cases, this figure dropped down to 20% for one year, and during the last year has risen to about 30%. Common duct stones have been found in 16% of all cases operated upon, and of those in which stones are found in the gall-bladder, about one out of five will also have common duct stones.

Walters and Comfort[9] refer to the incidence of common duct stone as 12.19% of all cases. Lahey[8] reports an incidence of 19% of all cases and he opens the common duct in 41% of his cases.

If it is suspected that a stone does remain in the common duct, the patient should first have the advantage of the three-day biliary flush, [1,2,4] repeated over a period of weeks. The flush regime is given below:

1. Take 3 Decholin or Procholon tablets after each meal and at bedtime each day.
2. Take 1 teaspoonful of magnesium sulphate in water each morning.
3. Take two tablespoonfuls of pure cream or olive oil before noon and evening meals and at bedtime each day.
4. On the first day, place 1 nitroglycerin tablet (1/100 grain) under the tongue before each meal.
5. On the second day, dissolve 1 atropine tablet (1/100 grain) in a little water and take before each meal.
6. Repeat the nitroglycerin on the third day.
7. In cases with T-tube or catheter in the common duct, daily irrigations with warm saline and warm olive oil are of definite value.

Of late, if there has not been definite relief after two flushes, I have resorted to giving the sodium salt of dehydrocholic acid intravenously, usually 10 cc. of the 20% solution (Decholin) once a day for three days.

This is repeated after a week's rest, if necessary. This method has been successful in several cases when the oral method has failed. The only contra-indication to the flush is complete obstruction of the common duct with no visible bile in the stool. Under such circumstances the increased intraductal bile pressure would theoretically build up sufficient intrahepatic pressure to cause damage to liver cells. If the stone or stones have not been dislodged after two attempts with the oral method and two with the intravenous method over a period of six weeks, operation is definitely indicated. One must not forget that liver damage follows each attack of biliary colic. Before the introduction of the biliary flush, one was more likely to prolong the disability period by waiting and hoping that "it would wear itself out and something would happen to give relief," but now if increased bile flow and intraductal pressure combined with relaxation of the sphincter area do not bring relief in six weeks, I can see no reason for prolonging the disability period and delaying operation.

At the secondary operation, as in all choledochostomies, I believe the small T-tube is more efficient than a simple catheter in the common duct for several reasons. If spastic dyssynergia occurs, a T-tube is not so easy to remove accidentally. The T-tube affords clearer cholangiograms, which should always be made before removing any T-tube or catheter within the common duct. Personally, I place the omission of the delayed cholangiogram in the same category as omitting an x-ray of the wrist, ankle or hip following injury to these regions, as all disability periods are shortened by taking advantage of all methods for early diagnosis, and especially is this true in the complicated case.

Bibliography

1. BEST, R. RUSSELL: Cholangiographic demonstration of remaining common duct stone and its non-operative management. *Surg., Gynec. & Obst.*, 66:1040-1046, June, 1938.
2. BEST, R. RUSSELL: The management of common duct lesions. *Nebraska M. J.*, 26:5, January, 1941.
3. BEST, R. RUSSELL, and HICKEN, N. F.: Cholangiographic demonstration of biliary dyssynergia. *J.A.M.A.*, 107:1615-1619, November, 1936.
4. BEST, R. RUSSELL; HICKEN, N. F., and FINLAYSON, A. L.: The effect of dehydrocholic acid upon biliary pressure and its clinical application. *Ann. Surg.*, 110:67-79, July, 1939.
5. BEYE, H. L.: Conditions necessitating surgery following cholecystectomy. *Surg., Gynec. & Obst.*, 62:191-202, 1936.
6. CARTER, GREENE and TWISS: Diagnosis and Management of Diseases of the Biliary Tract. Philadelphia, Lea and Febiger, 1939.
7. FOSS, H. L., and LILLIE, J. C.: Secondary operation on the biliary system. *Ann. Surg.*, 113:810-823, May, 1941.
8. LAHEY, F. H.: Discussion. *J.A.M.A.*, 99:894, 1932.
9. WALTERS, WALTMAN, and COMFORT, M. W.: Difficult problems encountred in surgery of the biliary tract. *Surg. Clin. N. A.*, 18:1083-1101, 1938.

American Association of Industrial Physicians and Surgeons

FOR more than a quarter of a century, the AMERICAN ASSOCIATION OF INDUSTRIAL PHYSICIANS AND SURGEONS has persistently upheld the standards of the practice of medicine and surgery in industrial groups, and has just as consistently represented a national force in raising such standards.

Organized in 1915, the original application for incorporation not for profit contains the names of DRS. A. M. HARVEY, H. E. MOCK, C. G. FARNUM, J. C. STUBBS, W. E. POST, T. R. CROWDER, of Chicago, and S. M. MCCURDY, of Cleveland.

On the original application was the following statement: *"The object of this association will be to foster the study and discussion of the problems peculiar to industrial medicine and surgery; to develop methods adapted to the conservation of health among workers in the industries; to promote a more general understanding of the purposes of the medical care of employees, and to unite into one organization members of the medical profession specializing in industrial medicine and surgery for their mutual advancement in the practice of their profession."*

From a representative group of several hundred industrial physicians and surgeons in the beginning, the Association has now grown to a membership of more than 1400, representing a veritable blue book of the manufacturing, commercial and transportation industries of the country. Originally developed as one association, the group now has component societies in various portions of the United States and also in Hawaii, among which are the following: Association for the Advancement of Industrial Medicine and Surgery; Central States Society of Industrial Medicine and Surgery; Association of Railway and Industrial Physicians and Surgeons of Kansas City: Hawaiian Society of Industrial Physicians and Surgeons; Florida Association of Industrial Surgeons; Georgia Association of Industrial Surgeons; New Jersey Association of Industrial Physicians and Surgeons; Michigan Association of Industrial Physicians and Surgeons; Maryland Association of Industrial Physicians and Surgeons; New England Conference of Industrial Physicians, and Western Association of Industrial Physicians and Surgeons.

Representative medical men from the most important industries serve as the Association's officers and Board of Directors.

As an example of the present activities of the AMERICAN ASSOCIATION OF INDUSTRIAL PHYSICIANS AND SURGEONS, the group now has committees on Certification; Fatigue; Medical Education; Medical Records and Procedures; National Defense; Nutrition; Prevention of Blindness; Psychiatry; and Venereal Diseases . . .

It is a matter of historical interest that the AMERICAN ASSOCIATION OF INDUSTRIAL PHYSICIANS AND SURGEONS took a very prominent part in war activities during World War I. In October 1917, DR. FRANKLIN MARTIN, Chairman of the Medical Section of the Council on National Defense, organized a subsection on Industrial Medicine. According to DR. HARRY E. MOCK, of Chicago, *"This committee proposed elaborate plans for the supervision of the health of all workers engaged in essential war occupations. Few of those in authority were familiar with this new field of medicine and it took weeks and weeks of patient endeavor to sell the idea."* On May 27, 1918, DR. OTTO P. GEIER, of Cincinnati, who was director of the committee, submitted an excellent report on "Industrial Medicine and Surgery as a War Measure." During this year also, DR. C. D. SELBY made an extensive survey under the Working Conditions Service of industrial establishments in both the United States and Canada.

Alert to the important place that industrial medicine and surgery was to take in the present world conflict in maintaining health of the industrial worker, this Association, at the request of DR. THOMAS PARRAN, Surgeon General, U. S. Public Health Service, appointed a committee to cooperate with the Division of Industrial Hygiene of the National Institute of Health. This committee, appointed June 3, 1940, consisted of DR. ROYD R. SAYERS, DR. CLARENCE D. SELBY, DR. EDWARD C. HOLMBLAD, DR. DANIEL L. LYNCH, DR. LYLE T. HAZLETT, DR. PHILLIP DRINKER and MR. WILLIAM P. YANT, and started to function at its first meeting July 9, 1940, at the National Institute of Health. From this nucleus developed the several advisory committees and subcommittees on industrial medicine. Among them are

the subcommittee on Industrial Health of the Health and Medical Committee, Council of National Defense, later transferred to the Federal Security Agency; the committee on Industrial Medicine of the National Research Council; and the Advisory Committee on Industrial Health and Medicine of the Procurement and Assignment Service of the War Manpower Commission. The personnel of these committees has changed somewhat from time to time, including such leaders in the specialty of industrial medicine and surgery as DRS. C. D. SELBY, LLOYD NOLAND, GEORGE M. SMITH, ROBERT KEHOE, W. A. SAWYER, A. J. LANZA, EDWARD C. HOLMBLAD, and PHILLIP DRINKER and WILLIAM P. YANT.

The Association's annual conventions have been post-graduate courses or institutes of training in industrial medicine and surgery, and for many years the Association has pioneered and developed the basic principles now recognized as fundamental. Such subjects as proper pre-placement physical examinations, the guiding principles in the employment of handicapped workers and those with syphilis, are among the subjects presented 15 to 25 years ago.

The transactions of the annual meetings, and the bulletins and activities of the AMERICAN ASSOCIATION OF INDUSTRIAL PHYSICIANS AND SURGEONS from year to year during the past 28 years, are in reality a history of the development of the specialty of industrial medicine and surgery. The Association is at present keenly interested in assisting to develop an American Board of Physicians and Surgeons in Industry, with certification and standards established, approved and recognized by the Advisory Board of Medical Specialties. This is a most desirable step in order to recruit into this specialty those younger physicians and surgeons with ability, vision, foresight and initiative, to make it equal in prestige and accomplishments to any of the specialty fields of medicine. The health of workers and executives in industry should have the services of the best medical talent to be obtained anywhere.

The "War Conference"

THE annual report of DR. E. C. HOLMBLAD, managing director of the AMERICAN ASSOCIATION OF INDUSTRIAL PHYSICIANS AND SURGEONS showed the continuing growth of the membership, which has now reached "well over 1400," with 169 members in military and naval service.

DR. HARVEY BARTLE, Philadelphia, succeeded DR. J. J. WITTMER, New York, as president, and DR. FREDERICK W. SLOBE, Chicago, was chosen president-elect. DR. M. N. NEWQUIST, New York, was elected first vice-president and DR. LOYAL A. SHOUDY, Bethlehem, Pennsylvania, second vice-president. DR. EDWARD C. HOLMBLAD, Chicago, was reelected treasurer and managing director.

The RHODE ISLAND SOCIETY OF INDUSTRIAL PHYSICIANS AND SURGEONS was added as a component society, with DR. CHARLES L. FARRELL, Pawtucket, president; DR. RICHARD F. MCCOART, JR., Providence, vice-president; DR. JAMES P. DEERY, Providence, secretary; and DR. ROBERT T. HENRY, Pawtucket, treasurer.

The KNUDSEN AWARD for 1942-1943 was given to DR. WILLIAM A. SAWYER, since 1919 medical director of Eastman Kodak Company. The award was made for "outstanding work in the control of tuberculosis, constructive contribution to a practical program of nutrition in industry, and the establishment of a program of rehabilitation for handicapped workers in industry, and pre-habilitation of those aspiring to work in industry." DR. SAWYER is the fifth recipient of the Award, which was established by WILLIAM S. KNUDSEN, then president of General Motors, in 1938. The previous recipients were DR. C. O. SAPPINGTON, 1938-1939; DR. L. U. GARDNER, 1939-1940; DR. R. R. SAYERS, 1940-1941; and DR. C. D. SELBY, 1941-1942.

The full report of the WAR CONFERENCE will feature the July issue, with several more of the papers—the others to follow in successive numbers.

Central States and Chicago Societies

THE annual meetings of the CENTRAL STATES SOCIETY OF INDUSTRIAL MEDICINE AND SURGERY and the CHICAGO SOCIETY OF INDUSTRIAL MEDICINE AND SURGERY, were held jointly, as an Industrial Health Conference, on Tuesday, May 18, 1943, the first day of the 103rd annual meeting of the Illinois State Medical Society, at Chicago. The presentations by GEORGE P. WARDLEY and JAMES CROSSER are intended to be published in *Illinois M. J.* DR. C. O. SAPPINGTON'S president's address appears in this issue (page 361). DR. HAROLD A. VONACHEN spoke extemporaneously, highlighting the following: "Industrial health programs in one form or another are now available to 35% of employed people . . . Social medicine, or whatever the planners may want to call it, will never attain a more satisfactory government application than the expression which is now being given to it every day by and through the medical departments of the large industries . . . In Caterpillar's syphilis control program 60,000 Kahn tests have been made to date; non-contagious applicants are never rejected; 460 cases have undergone treatment and are now on their jobs . . . Referring to illnesses among industrial employees, the oft-enquoted 90% is erroneous; it should be 75% . . . In days past it may have been true that pre-employment examinations were sometimes used in a discriminatory manner; fortunately the time of that kind of use is a great many days past; the larger employers are completely sincere in their desires for and efforts toward health and safety, though they are often damned as a group through too much emphasis on a little individual unscrupulousness." Following his talk DR. VONACHEN showed his film on Rehabilitation—*his* film, because he made it. The sequence followed numerous handicapped workers into the Caterpillar plant, and through their jobs; and it followed one of them home, with a closing punch so humanly dramatic that the spell-bound audience gasped. This picture was also shown by Caterpillar's DR. PALMER at the War Conference at Rochester, May 27, with the same effect.

The Joint Meeting program follows:

Morning

C. O. SAPPINGTON, CLARENCE W. HENNAN, Presidents, Presiding. JAMES J. CALLAHAN, THOMAS C. BROWNING, Program Chairmen:

Address of Welcome—CLARENCE W. HENNAN, M.D., Chicago, President, Chicago Society.

"Industrial Health and the Employer"—GEORGE P. WARDLEY, Assistant Vice-President, Industrial Relations Department, Carnegie-Illinois Steel Co., Chicago.

"Labor's Attitude on Industrial Health"—JAMES CROSSER, Chief Chemist, Industrial Relations Department, Illinois State Department of Labor, Chicago.

"Industrial Health and the Industrial Physician"—HAROLD A. VONACHEN, M.D., General Medical Director, Caterpillar Tractor Co., Peoria, Illinois.

"Industrial Health—Its War and Post War Significance"—President's Address (Central States Society)—C. O. SAPPINGTON, M.D., DR., P.H., Chicago.

Afternoon

JOINT SESSION with the Surgical Section of the Illinois State Medical Convention:

"Treatment of Burn Lesions with Biodyne"—THOMAS F. P. WALSH, M.D., Chicago.

"The Selection of the Proper Surgical Incision"—ALFRED B. OWEN, M.D., Rockford.

"Tumor Diagnostic Services in Illinois"—HARRY OTTEN, M.D., Springfield, Illinois.

"A Modified Technique for the Combined Ligation and Retrograde Injection Treatment of Varicose Veins"—JOSEPH M. GAULT, M.D., Chicago.

"Differential Diagnosis of Low Back Pain"—W. STUART WOOD, M.D., Decatur, Illinois.

"One-sided Spinal Anesthesia in Extremity Surgery"—DAVID L. MURPHY, M.D., Dixon, Illinois.

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Financial Absenteeism

Much stress has been laid in these columns upon the necessity for each of us, as a patriotic duty, to buy war bonds and to influence every one with whom there is contact to buy war bonds beyond any point that would normally seem prudent. Today we are in the early stages of a well developed bull movement in securities. One financial writer, a professor of economics, currently confirming this, goes on to say: "In fact, there are some indications that the movement may break into a new phase of the bull market—one that would discount a victory of the allies abroad and individual freedom at home." Shrewd men may be heavily extended in this market, or in real estate, furnishings, etc. Such men, however, are not really shrewd; they are, possibly, smart, but in terms of the total situation they are only selfishly smart.

The man who is really shrewd is looking beyond the war and its present phenomena to his own welfare and the welfare of his fellow men in time to come. Right now he is staring into the face of an inflation, as to which he fully appreciates that while it may be a grand experience during the first up-sweep, the pace will become faster and faster, to culminate in misery at the crash and to extend in hardship following the debacle. He views the bull market, therefore, not as an opportunity for himself, but as a threat to all.

Our government is not doing a good job in restraining this threat. Probably this is because we ourselves are not doing a good job in making the threat unnecessary. It is not in the nature of democracy that government shall lay the iron hand upon us in every respect of our national need. But it is in the nature of successful and victorious democracy that we must lay the iron hand upon ourselves. For *we* are the government. It is *our* country; it is *our* war; it is *our* sons and brothers and husbands who are fighting it. U. S. means *US*. Fundamentally it is abominable that our young men should have to give over their peacetime positions to join the armed forces at greatly reduced incomes, eventually to be shot at and perhaps killed. But it is much more abominable that only one-sixth of the 18 billion dollars of the second war loan should have been taken up by individuals. The first condition was not our fault, and may not have been our government's fault; it came by way of attack upon our national integrity and honor. But the second lies right at our own doors. It *is* our fault—a reproach to our patriotism and, even more, a reproach upon our intelligence. For we are certainly not patriotic if we fail to support our sons and brothers and husbands at the front; nor are we intelligent if we expect "victory of the allies abroad and individual freedom at home" without doing our share to deserve them. The professor of economics above quoted continues: "Inflation marches on, and the problem of what to buy with idle money must be solved by many who will turn to the stock market."

It is a bitter commentary on our Americanism that there is such a thing as idle money. In the all-out effort to which the enemy compels us, it represents a form of absenteeism, much more costly than if it were personal instead of financial, and much more a cause of shame to all of us because we accept its existence so smugly and let its disposition in the purchase of things other than war bonds be talked about so casually.

Successful Meeting

All reactions from the "War Conference" of the American Association of Industrial Physicians and Surgeons and the Industrial Hygienists at Rochester, New York, May 24-27, have been that it was a highly successful meeting. The program was carried through according to schedule; the discussions were lively, and a great many questions were asked; the attendance exceeded all expectations, being more than twice as large as that of the previous year at Cincinnati; the surgical clinics at the University of Rochester on Wednesday morning were especially interesting, with the attendance there, too, larger than expected; and the Wednesday evening meeting at Eastman Theatre, following supper in the Eastman cafeteria, combined superlative entertainment with some very excellent and thought-provoking addresses. One of the currently prominent interests of the industrial physician centers around the feeding of employees. Those who were present at the supper had an object lesson in cafeteria design and operation, as well as in applied excellence in the matter of selecting and preparing cafeteria menus. Nearly a thousand people entered the building, took their places in the lines, had their trays filled with the foods of their choice—all tastefully prepared and appetizingly displayed—and were seated at tables, with no waiting, no confusion, and, seemingly, all at once, so quickly was it done. In every respect this War Conference was one of the most interesting and most successful meetings the Associations ever had. There was something important and vital for everyone who attended. And, from the attention given to all that went on, they got it. It must have been a great satisfaction to all concerned to realize that their efforts contributed so much of real value to industrial medicine at war.

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*Fairo, C. J.: Nethacetin in the management of primary dysmenorrhea, Indust. Med., *12*:201-202 (1943).

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Physician and Surgeon

—Relationship to the Compensation Carrier in Wartime—

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THE relationship of the physician and surgeon to the compensation carrier in wartime is primarily legislative in nature, secondly, social in nature, and finally, medical in nature. The legislative function is embraced in the legislative dogmas of the various state statutes. Given an injury occurring accidentally to a workman in the course of employment, the injured workman becomes a subject of study not only to the doctor, but also to the compensation carrier who bears the legal risk of the employer made obligatory by statute. The successful medical and legal adjudication of the workman's problem most frequently depends upon the relationship of the doctor to the carrier.

Originally, accidental injuries of workmen were not subject to state laws making mandatory the payment of compensation to workers sustaining an accidental injury in the course of employment. The worker, depending upon the common law doctrines of negligence, had little if any recourse to relief except when he became the subject as well as the object of private insurance. In theory, the private carrier in assuming the definition of an accident in the policy terms would be guided by the meeting of the minds of the parties to the contract of insurance. In practice, however, the workman was bound by the stereotyped policy provisions in the contract of insurance. He had only the opportunity to accept or reject in whole the policy as proposed by the carrier. However, with the introduction of the compensation laws, the policy provisions became the provisions of the law of the state in which the carrier was assuming the legal risk responsibilities of the employer. Consequently, the factors which would give rise to compensation were now no longer determined in practice, as in the case of private insurance, by the carrier offering the policy, but were determined by law if the carrier assumed the responsibility of offering such a policy to the employer.

The function of the physician and surgeon to the compensation carrier, therefore, is one primarily determined by legislation and expressed in the policy coverages of the compensation carrier.

Generally speaking, the injured workman under the law and under the policy coverages becomes qualified for compensation if:

1. The quality of the causes is violent.
2. The circumstances of the accident are verified in the occasion of work.
3. The nature of the effects sustained results either in death or in a reduction or a complete nullification of the capacity to work.

Issuing as they do from the trunk of the law, these legal qualificatory branches give rise to compensation. The legislative function of the physician and surgeon, therefore, is made mandatory in these three respects by the provisions of state statutes.

An understanding of these three prerequisite qualifications is essential before a complete evaluation of the relationship of the doctor to the carrier can be comprehended. Let us consider, therefore, the two primary qualifying branches of the trunk of the law. The law, influenced by the dynamic changes in modern economy has placed upon the shoulder of the physician and surgeon the additional legal and investigative burden of determining whether a given disease is in nature legislative, or occupational, or a professional disease arising in the ordinary routine of practice. As to whether the injured worker receives compensa-

tion depends entirely upon the legislative nature of the disease as reported by the physician and surgeon submitting the initial surgeon's report form to the carrier.

This legislative disease created by the various state compensation acts is one that exists by virtue of an accidental event arising out of the occasion of work. Fundamentally, it is an injury to the body caused by the action of an exterior force. The action is usually quick, violent, and produces effects upon the organism. In short, it is a disease comprehending all the injuries to the organism, apparent or non-apparent, internal or external, profound or superficial. It is an injury, arising by accident, which is sustained and would not have existed but for the fact that the employee had work, which work produced death, or a condition to the body, or a disturbance to the mind with consequent inability to work. In short, this legislative disease may be said to be a sudden violent injury, not desired, for which the worker is not responsible, coming by way of work, and relatively free from what would happen in the ordinary routine of life itself.

The relatively rapid occurrence of the injury preceded by the action of a violent force seems to approximate more clearly the requirements of most compensation acts. However, the greater the lapse of time, the more the resultant injury, disease, or effect enters into the scope and ambit of a professional or occupational disease usually not compensable. The condition, therefore, becomes one that is characterized by the normal alterations in pathology necessarily derived from the normal exercise and continuation of work.

So it becomes apparent that these so-called legislative diseases are chronologically limited in time to the accident in question. They differ from the professional and occupational diseases in that the proximating agents do not find their basis in a long series of facts which present, usually, a gradual and progressive change in the structure and function of the organs of the body—the test, therefore, being: is the condition of the body, effect, disease, one which is slow, protracted, and repetitious, or is it one which has a rapid and causal relationship to the injury in question? If the latter, we are approximating the scope of conditions that our legislators had in mind. The test, of course, is limited to the relatively few exceptions where the effect following the accident is in itself slow, protracted, and repetitious. It is clear, therefore, that the physician and surgeon cannot in all cases competently ascribe the ordinary routine effects of work as being related to a violent injury. Under some state statutes, however, where the effect or injury is compensable irrespective of violence, then the legislative problem is different because of the difference in state statutes.

The doctor may become irritated at these distinctions, but he must bear in mind in his original surgeon's report form that the legislators have set down their own concepts as to what constitutes a legislative disease and how it arises. In a sense this embodies vulgarizations in the concepts of science and pure medicine, but it is occasioned by the necessity of having a medical-legal criterion whereby the effects conditioned by accidental injuries may be properly evaluated in a medical juridical sense under the workmen's compensation acts.

The third qualifying branch of the trunk of the law postulates that if the nature of the effects sustained results either in death or in a reduction or a complete nullification of the capacity to work, the worker is entitled to compensation within the legal meaning of the policy coverages. This third prerequisite presup-

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*Swartz & Reilly, "Diagnosis and Treatment of Skin Diseases," p. 66.

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poses that the physician, first, has a concept of whether or not the reduction or nullification of the capacity to work is in any way affected by problems of simulation, exaggeration, and pretense on the part of the injured employee, and, secondly, a concept of the disability factors affecting the capacity of the injured employee to perform work, or not to perform work.

LET US consider, therefore, the concept pertaining to simulation, exaggeration, and pretense. To the compensation carrier, injuries which have their basis in exaggeration, simulation, and pretense are usually the most difficult to adjust. It is within this category of cases that the greatest conflict between the carrier and the doctor exists. And it is within this field that the carrier must rely heavily upon the judgment of the doctor.

The physician and surgeon must be careful in determining that the injured workman is not simulating, exaggerating or giving pretense of some injury. Such a set of conditions tends to prostitute the benefits designed and made obligatory under the various workmen's compensation acts. For many workmen, the acts were not solely promulgated to compensate for accidental injuries, but to compensate them for every disturbance of work from injury acquired. It is essential, therefore, for the doctor to distinguish between the good and bad faith of the injured employee. On the other hand, it is equally essential for the carrier not to see in each case an attempt to simulate, exaggerate or pretend.

These conditions are not dependent on the social status, economic status or cultural perspective of the individual employee. They are universal factors, often having their basis in fear. The fundamental idea prevailing psychologically in the minds of all injured employees is that they will not receive or, in receiving, will not acquire, sufficient compensation. Hence, the urge to simulate, exaggerate, and pretend. Herein lies the investigative function of the physician to the carrier.

The simulating employee intentionally creates or divulges a corporal injury or psychical phenomena. The exaggerating employee, on the other hand, definitely has a corporal condition or psychical phenomenon, but in spite of this he demonstrates and manifests conditions based on unreality. The pretending employee falsely refers his injury or subjective condition to a cause which is well established and determined, or to a cause or violent accident which never happened nor existed, or to a situation or occasion of work that never occurred. His action is purely voluntary, and likely to be morbid.

While it is often apparent to the carrier that these subjectively created conditions have no objective basis, and that claims of this nature usually present contradictory and absurd phases, yet the carrier is really in no position to deny the existence of the condition subjectively created and presented. On the other hand, it is rare to find the industrial physician, who represents the injured employee, who will break through this screen of subjectivity, disintegrate its mask, and reveal the true problem to the compensation carrier involved.

However, tests do remain present which the physician in conjunction with the claim presented against the carrier should bear in mind. All conditions, whether simulated, pretended, or exaggerated, may be tested by their causes, their manifestations, and their effects.

Injuries which are simulated or exaggerated are usually manifested. In regard to the effects sustained

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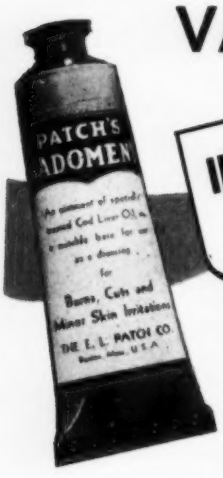

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by accident to an employee, there are those categories of injuries which are aggravated, prolonged and maintained. In regard to the causes pertaining to the accidental injuries there are those conditions which are pretended.

To the compensation carrier, the simulator is a great problem. The compensation carrier relies heavily on the judgment of the doctor and expects from him a true revelation of the problem. The carrier sees in the simulating employee a lack of originality, a complete ignorance in the cause of the injury which he feigns or counterfeits. The carrier sees the simulating employee as one who will always remain insensible to the moral and judicial consequences of his acts. In the case of the pretender, the greatest source of litigation is evolved; and the greatest amount of testimony is called for relating to the causal factors. Bad faith is not usually characterized in this type of claim. Often the true basis lies in ignorance on the part of the employee. It is the function of the physician and surgeon to delineate the limits of this ignorance, or a case will become compensable having no basis in law or in fact. The great number of inguinal hernia and back injury cases which are contested in our compensation boards and courts are within this category.

Again, under the category of the pretended cases, it is essential that the doctor distinguish between those injuries and diseases having a traumatic origin and those which are morbid and organic in origin. In a great number of cases carriers have paid for the latter condition and have neglected to pay for the former condition. Ignorance of the philosophy of the act, and the competitive testimony of medical experts has been largely the source of this dilemma.

While the majority of the cases that have been litigated under the category of pretense have involved the inguinal hernia and back injury cases as well as the cases involving a distinction between injuries traumatic in origin as differentiated from cases organic in origin, doctors and carriers through their mutual experiences in these types of cases have seemed to be agreed as to the distinctions involved, and the problem no longer remains chronic and disturbing but represents a passing phase of the relationship between doctors and carriers. However, today, the problem of aggravation has assumed a most important role. Here again it is wise to bear in mind that while problems of aggravation often shade into the category of exaggeration, they are still largely in the category of pretense and are sisters to the problems of inguinal hernia and back injury cases.

The function of the physician and surgeon regarding the problem of the pretending employee is highly difficult, yet a careful investigation by the examining doctor as to the causal factors will always reveal whether a given case is or is not compensable.

It is the function of the industrial physician and surgeon carefully to discriminate between exaggeration, simulation, and the various categories of pretense so that the carrier may properly determine whether the case is or is not one in which compensation should be paid.

THE third qualifying branch of the trunk of the law postulates that if the nature of the effects sustained result either in death or in a reduction or a complete nullification of the capacity to work, the worker is entitled to compensation within the legal meaning of the policy coverages. This, of course, presupposes that the doctor has a concept of the disability factors affecting the capacity of the injured employee to perform work, or not to perform work.

No field has given rise to a greater conflict between the carrier and the doctor than this field. Primarily, disability evaluation is necessary for the computation of compensation benefits. Compensation benefits are regulated by statute, and are in nature mandatory and fixed with respect to the length of the disability and the nature of the injury. Disability evaluation, therefore, is an essential prerequisite in any procedure whereby an attempt is made to estimate the compensation rates.

From the point of view of compensation, disability evaluation may be distinguished according to its duration, which may be temporary or permanent; according to its grade, which may be partial, occupational, absolute, or almost absolute; and according to its cause, which may be disability arising from accident, from disease, or from other factors of disability:

1. Temporary total disability, i.e., the period during which the employee is under treatment and is totally disabled from any working activity.
2. Temporary partial disability, i.e., the period in which the employee is on the way to recovery but remains unable to return to full working activity, but is capable of performing some light function of work.
3. Permanent partial disability, i.e., that disability which continues as a result of the injury in the body or in some particular part of the body after therapy has ceased, and maximum employment has been reached.
4. Permanent total disability, a term which is in itself explanatory.

THE determination of disability presents many uncertainties and difficulties because it treats not only of ascertaining exactly the nature of the infirmity and the functional impotence that the infirmity carries with it but also whether or not the type of work in which the injured employee was engaged is in any way related to the particular disability in question. Generally speaking, the practice has been in the usual accident cases for the doctor to evaluate the physical disability according to the sound and sane man with medical criteria which are absolute. In such a case a coefficient has been applied to each organ and to each function, and such coefficients have been independent of the occupation exercised. More particularly difficult has been the situation where doctors have applied coefficients for disabiilty evaluation according to occupation when the occasion necessitated that the medical criteria become associated with the economic criteria. Fundamentally, however, the determination of both permanent and partial disability has been based upon the individual experiences of doctors in the practice of medicine. Doctors are not and have never been agreed as to the standards of disability to be applied, or as to the bases upon which those standards are to be fixed. Save for a few pioneers in the art of industrial medicine and surgery, such as Scudder and McBride, this empirical method of evaluation according to the individual experience of innumerable doctors has been shadowed by an earnest and scientific method; a method whereby disability evaluation has been measured according to its economic, anatomical, and functional result on the basis of fairly scientific percentage figures.

The constant uncertainty and difficulty in establishing a fairly adequate standard and basis for disability evaluation has been further complicated by a growing conflict between doctors and insurance carriers regarding the spheres of influence by which their standards are to be exercised. It has been suggested by numerous

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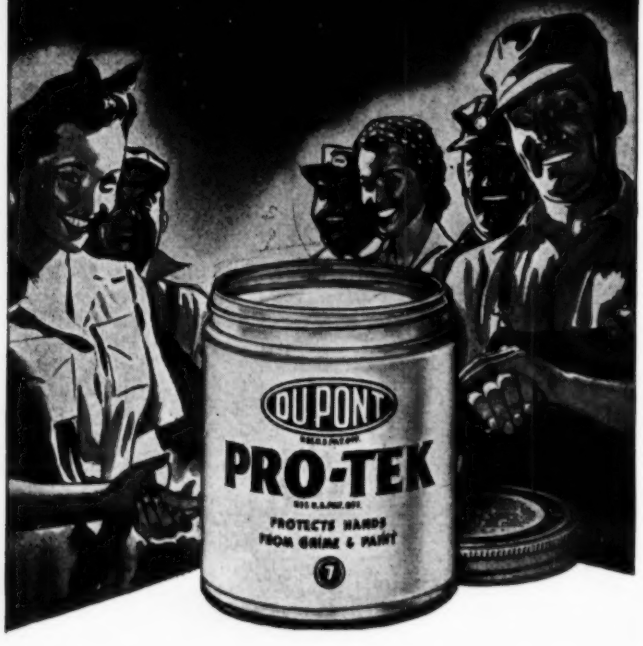

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doctors who have had experience with compensation carriers that the question of determining disability evaluation is particularly a medical one, and that the lay representatives of the compensation carrier are in no position whatsoever to lend an opinion thereon. Compensation carriers have suggested that in so far as the problem is medical in nature they are bound by the professional opinion of the physician appointed by the carrier, and in so far as the problem is not medical in nature, they are free to pursue the economic, legal, and investigative aspects of the disability problem. Doctors have suggested that the physician of the carrier is prejudiced, and that the economic, legal, and investigative aspects of disability determination are only exercised for the purpose of lowering the loss ratio of the carrier.

Suffice it to say there are both truth and falsehood, merit and demerit in these arguments. The problem would seem to be easily dissipated by an understanding between the carrier and doctor as to their respective spheres of influence, and an earnest effort at cooperation in carrying out the understanding thus established. It is a virtual certainty that the determination of the anatomic and functional consequence lies purely in the realm of scientific medicine. However, it is wise to bear in mind that the question of disability evaluation is not, under our laws today, purely a medical question at all. The layman enters into the picture whether he be a lawyer, an expert in economics, or otherwise, by virtue of the fact that he must determine the economic, the legal, and the investigative aspects of the disability problem. The doctor has little time and is really in no position to investigate the earning capacity of the worker, the occupational nature of the work and its environmental indicia, the possible future working capacity of the employee, and the general economic conditions of the time in connection with the worker's disability.

Clearly, therefore, the layman has and always will have a part in disability evaluation. This, coupled with the fact that disability evaluation is not purely medical but also economic, crystallizes the importance of cooperation between the carrier and the doctor. While no present method as yet is visible to substitute the function of the carrier in this respect in the realm of medicine, yet it is clear that by the exercise of reasonable discretion on the part of the respective parties there should be no conflict so long as the carrier complements the medical evaluation of the doctor with its own economic determination.

Truth, honesty and frankness of purpose in the exercise of these functions ought to flatten out those differences that exist between the parties and enable the carrier in connection with the surgeon and physician to carry out the high purposes underlying the philosophy of the various workmen's compensation acts.

THE social function of the physician and surgeon to the injured employee, in his relationship to the carrier, is in no manner less important than the previously discussed legislative function. An injured employee suffering an established compensable disability is a serious loss to the productive pool of labor, to his family, and to society as a whole. Hence the social obligation to renew the productive worth of a human unit of labor either by medical rehabilitative procedure, or surgical rehabilitative procedure. In the case of medical rehabilitation no serious difficulty has been encountered, but it is difficult to have an injured employee entertain surgical rehabilitation where the injury is severe.

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tion between the physician and the carrier. The carrier often seeks surgically to rehabilitate an injured workman who has sustained a severe traumatic injury. Under our jurisprudence the concept of submitting to an operation of a surgeon does not prevail. The carrier is motivated toward this end first, purely to rehabilitate; secondly, to lower its loss ratio.

Where the operation is not submitted to, the carrier is usually required to pay in full the compensation rate prescribed by statute. The injured employee benefits slightly by the relatively small pecuniary security of the compensation payment. He may or may not, under the circumstances of a given case, be detrimentally affected. His detriment consists often in the loss of earning power and the maintenance of his disability. Consequently, there has existed, still exists, and will always exist a conflict between the carrier and the employee in this respect.

The physician and surgeon who centrally occupies the theme of this dramatic conflict must determine, first, the extent and nature of the disability involved, and, secondly, whether or not there is an unjustifiable refusal to submit to an operation which will benefit his post-traumatic condition. If his answer is in the affirmative to the second problem, then his social, ethical duty, irrespective of legal sanction, ought to impel him to propose such a procedure to the worker as well as to the carrier.

Such a procedure suggests, considering the number of cases in this regard, a collective benefit to the working capacity of labor itself. It is in principle superior to the idea of individual benefit of security by way of small compensation payments. The principle of mass benefit through surgical rehabilitation is just, as the social trends of the day lie in that direction.

The injured workman who decisively refuses to assume a position which, in terms of practical exigency and organic and functional reintegration, would be beneficial to him, in a great sense violates his social and ethical duty to society. The violation lies in his failure to make himself a usefully productive unit in the pool of labor. Surgeons ought, therefore, to lend their efforts in this respect, and closely advise the carrier regarding the necessity of the operation, and the unreasonableness of its refusal.

HAVING considered the legislative and social function of the physician to the employee in his relationship to the compensation carrier, the medical function now importantly moves itself forward for consideration. It is sufficient to say that only the learned in the art and lore of medicine have a conceptual comprehension of this function. However, certain procedures may be suggested which would facilitate the claim of the injured employee as presented to the compensation carrier. The doctor should keep medical records in case the problem of the injured employee should ever be litigated before a board or a court. He should not destroy his x-ray films, since they are extremely important in the trial of a case at law. As his bills are many times questioned by the compensation carrier, they should conform to the general fee schedule of the district in which he practices. Compensation carriers usually mail out to the doctor a form, which is more or less standardized, entitled "Surgeon's First Report of Injury." This form is to be completed immediately after seeing the patient for the first time. The form seeks to elicit from the doctor answers concerning the patient, the accident, the injury, the treatment, and finally the question of disability. The answers concerning the name, age and address of the patient, the name of his foreman and the department in which he works are, of course, routine and of little significance. However an answer concerning the occupation of the injured employee is important because it bears significantly on the question as to whether the disability is in any way related to the injury in question. The questions eliciting the date and hour at which the accident happened, and the date in which the disability began are required because they set in motion the time-clock schedule of the compensation rates as prescribed by statute. Questions relating to the injury, the treatment, and the disease call forth the diagnostic, therapeutic and prognostic powers of the doctor. These questions are closely related to the legislative and social functions of a physician to an employee in his relationship to the carrier as previously discussed. In eliciting a history of the accident from the patient, it is advisable to take down in the patient's words exactly how the accident happened, because it bears importantly on the question of liability under the law, and as to whether compensation is justly warranted. The physical examination of the injured employee is somewhat different from the physical examination of the ordinary patient entering the doctor's office. In the former situation, the injured employee makes it clear to the doctor that his symptoms, whatever they may be, are the result of a certain cause or event. Herein lies the legal, social, and investigative function of the doctor. In the latter situation, the patient presents an array of symptomatic conditions, and requests an explanation or solution thereof. The former situation requires a differential diagnosis, and is subject to legal as well as diagnostic consideration. The latter situation is purely diagnostic and devoid of any legal significance. The laboratory examination of the doctor, if it bears on the injury in question, is always welcomed by the compensation carriers, and the bills respecting the same are seldom, if ever, denied. In short, the medical function of the physician is essentially prerequisite to any solution of the compensation problem.

The physician and surgeon, having executed the necessary legal, social, and medical functions, is often required to testify before a compensation board, or a court of law. The testimony of the medical expert in this regard usually relates to some dubious aspect of the accident, the injury, or the disability problem. Often the testimony is in behalf of the injured employee as represented by the lawyer. At other times, it is on behalf of the employer as represented by the legal agent representing the compensation carrier. At times, it is impartial testimony devoid of any consideration of the interests of the employee or the employer.

Broadly speaking, expert medical testimony before a compensation board is based on the technical knowledge and experience of a doctor in the science of medicine and surgery. In a sense, therefore, any physician who uses this knowledge may be an expert. In a more restricted sense, however, a true medical expert is one who has made a special study in some special field in the science of medicine and surgery, and this would exclude from this category the general practitioners.

The expert testimony of the compensation doctor must be distinguished from the ordinary testimony which he may from time to time be called upon to present. Ordinary testimony treats only of the presentation of facts without any reasonable explanation upon which the facts are founded. In theory, it is assumed that the layman, the compensation arbiter, the judge and the jury are capable of understanding the basis upon which the facts are founded.

On the other hand, expert testimony, particularly opinion evidence which is based on hypothesis or ob-

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servation, unlike ordinary testimony, does not carry with it a comprehension of the basis upon which the facts are founded. In legal theory, it is assumed that the layman, the compensation arbiter, the judge and the jury are not capable of understanding the basis upon which the facts are founded. The testimony is such that it may be competently offered in evidence because the layman has no comprehension of the underlying basis. In practice, however, a paradoxical situation is evolved when two experts testify in a manner contrary to each other. The layman finds himself in a position where the responsibility of determining the basis of the opinion rendered becomes exclusively his own. Consequently, therefore, the purpose of expert opinion evidence is nullified, and the layman wraps around himself the garb of omniscience and gathers the basis unto himself in whatever manner he deems fit.

It is essential, therefore, quite aside from the theoretical complications and paradoxes involved, in all hearings involving a controversial medical-legal problem to state clearly the basis upon which the expert opinion is rendered. Such a procedure suggests a correct juridical conclusion on the part of the compensation arbiter, the judge, and the jury. The testimony, therefore, must present a basis which is reasonable in nature and character.

The compensation medical expert should always confine his testimony strictly to the realm of the facts which are before him, without speculating on possible but improbable facts. The lack of, or error in, or insufficiency of reasons motivating his expert opinion tends to nullify the expertness of his testimony and equally tends to prejudice the cause of the injured employee. It is only by having a stable basis for his opinions that the compensation arbiter, judge, or jury is enabled to approximate the truth of the problem involved. It is not anemic, therefore to suggest the thought that the physician or surgeon who assumes the function of a medical expert is bound by a rigid perspective of scientific truth. Otherwise, he draws forth the entire resentment of his profession if his testimony fails to meet ethical and scientific requirements. Similarly, any sentiment, malice, sympathy, or bias in the presentation of such testimony is equally repugnant to the professional esprit of fairness.

The presentation of dishonest testimony is highly reprehensible. Often the dishonest doctor is too clever to falsify his facts and only falsifies his opinions, and the difference between an erroneous opinion and one wilfully rendered is tenuous. It follows, therefore, in order to maintain proper relationships with the representatives of the carrier protecting the interest of the employer, that such methods be carefully avoided. It is equally incumbent upon the carrier in presenting its expert testimony on behalf of the employer to maintain a high standard of fairness in conformance with the social requirements of the law.

THE WOMAN'S BUREAU has formulated standards for eating periods for women in war plants—a minimum of 30 minutes' time, a menu that includes hot, nutritious foods at a reasonable price and a pleasant place in which to eat away from the workroom. In a recent survey of 183 war plants, Bureau agents found that 123 gave 30 minutes for lunch, not paid for in the worker's wages. A total of 1/5 of the plants paid for lunch periods, ranging from 15 to 30 minutes. Of 177 plants reporting on facilities, about 60% had cafeterias or mobile canteens serving hot food of some kind. The findings reflected a wide variety of conditions.

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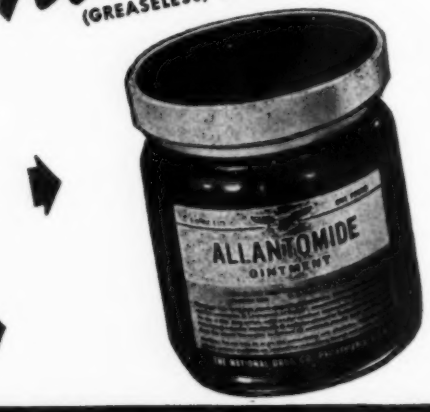

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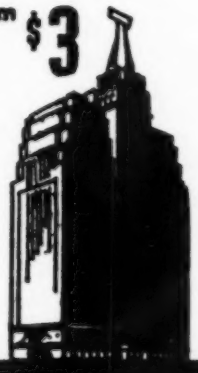

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Western Reserve University School of Medicine,
Cleveland, Ohio

Foreword by Foster Kennedy

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NEWS, COMMENT and OPINION

—*Continued from page 48*

plea is simply this: Let there be more cooperation between the local and the plant physician. With more consultations there will be fewer conflicts and many more man-hours saved.

—ANDREW M. BABEY, M. D., Chief Medical Examiner, Sperry Gyroscope Company, Inc., Brooklyn.

Physical Training

THE HEALTH evaluation of physical training has led to a further result which, it is felt, will have to be taken into consideration in the planning of every physical training scheme. Physical training cannot promote general health; health must be attained through a medical system. While poor health frequently impairs physical efficiency, a low standard of physical efficiency does not necessarily indicate illness; nor does even the highest possible level of athletic prowess prove freedom from disease. One of the main functions of physical training is to promote efficiency. This aim cannot be achieved by any other procedure. As the success of a physical training scheme depends greatly on the standard of other concomitant services, especially on medical care, feeding supervision, housing and social organization, all these services must invariably be coordinated with a scheme of physical training. The universal but unjustifiable faith in physical training as a primary promoter of health is dangerous. There is much evidence that this erroneous belief has in the past done a great deal of harm.

—From "A Medical Theory of Gymnastics," by ERNST JOKL, M.D., in *Clinical Proceedings*, the Journal of the Cape Town, South Africa, Post-Graduate Medical Association, January, 1943.

A SURVEY of 350 college heads as to what there will be the greatest demand for in the way of experts, once the war is over, disclosed the surprising prediction that the American field of health would be widest open. Of the occupational fields mentioned, health was named by 32.8% of the educational leaders, business by 22.4%, natural sciences by 18.4%, and government by only 3.4%.

—*New York Post*, quoted in *Trained Nurse & Hospital Review*, April.

AMONG the warnings given at the fourteenth annual North Carolina Safety Conference, May 21, at Charlotte, by MARY ANDERSON, director, Women's Bureau, U. S. Department of Labor, concerning women workers were these: Women are more likely than men to skimp on diet. Women are more susceptible than men to many grave occupational diseases. Women must be enabled to avoid constant sitting or constant standing, or they will suffer possibly serious injury. Women's constitutions show impressively the effects of fatigue if their work-week is longer than 44 hours. Adequate shopping opportunities for women are vital to limiting absenteeism. Health and guidance programs in the plants, sponsored by management, should carefully reflect the fact that tension on high-production jobs results in tremendous physical and emotional fatigue. MISS ANDERSON also warned that selecting any design of headwear requires "an iron hand in a velvet glove," because women invariably are sensitive about treatment of their hair. Also, she told the audience that in making selections of work clothing for women, management should at once be most careful of safety factors and of any attempt to put women into uniforms.

—*Charlotte North Carolina, News*, May 21.

THE diagnosis of lead poisoning should not be made in the man who has been exposed to lead in industry, unless he is ill.

—From the abstract in *Current Medical Digest*, May, 1943, of "Industrial Lead Poisoning as a Clinical Syndrome," by WILLIAM F. ASHE, in *J. Indust. Hyg. & Tox.*

HEALTH hazards of war work, including troubles with toxic materials, have caused New York State's labor department to establish a branch office of its Division of Industrial Hygiene at Syracuse.

—*Wall St. Journal.*

INDUSTRIAL HEALTH and DISEASE

Industrial Nutrition Manual

THE Food and Distribution Administration, Nutrition and Food Conservation Branch, has just issued an excellent pamphlet, the first of a series to be prepared and distributed by the Nutrition in Industry Division. This may be procured from one of the seven regional offices of the Food and Distribution Administration or the Washington office. The following are parts of the text of special interest to industrial medical departments:

WHERE periodic physical examinations are held, the addition of a few questions on diet to the medical history will serve to stimulate employee interest in nutrition, will have an educational effect and will enable the medical department to define the existing nutrition problem. The dietary history might take the following form:

Do you get at least one pint of milk daily? .....
If not, how much do you get? .....
Do you eat at least four eggs every week? .....
Do you eat either orange, orange juice, tomato, tomato juice, grapefruit, or grapefruit or fruit juice daily? .....
Do you get at least one serving of another fruit, either canned, dried, or fresh daily? .....
Do you eat at least one serving of another vegetable besides potato each day? .....
Do you eat either a green leafy vegetable or a yellow vegetable each day? .....
Do you eat raw cabbage or salad greens daily? .....
Do you eat at least one serving of lean meat, fish, poultry or cheese each day? ....
How often do you eat any kind of liver? ....
How many servings of dark whole grain breads and cereals do you get each day? ..
How many servings of enriched white bread and fortified cereals do you get each day? .....
Do you regularly use butter or margarine on your bread? .....
If you use margarine, is it fortified with vitamin A? .....
In the space below, fill in three actual meals eaten, naming the *kind* of food as whole wheat bread, or white, etc.

Breakfast Lunch Dinner

ALKALOL

is effective.

Its cooling, soothing properties

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Its blandness

Make its use a real comfort.

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these are minor reasons for using it.

ALKALOL is a truly effective solution.

It is correctly balanced with a "pH" approximating the blood plasma and lacrimal secretions.

It is a mucus solvent.

For eye, nose, throat.

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NUTRITION as a factor in the prevention of heat reactions—Ill effects in men working under conditions of high temperature are least often seen among those who are in good physicial condition, who are acclimatized to work in the heat, who eat a good diet, who replace their water loss hour by hour and their salt loss day by day.

Water should be available at all times. Salt must be taken in adequate amounts each day. Preferably, however, it should not be taken during the work period, but should be taken with meals and during rest periods, and especially after the conclusion of the day's work.

The water soluble vitamins thiamin and ascorbic acid may be lost in the sweat but the possible severity of such losses has not as yet been determined, and no recommendations are possible.

Heat stroke is a critical emergency, the only effective treatment for which is to lower the body temperature by means of ice baths, ice enemas and, when possible, cool drinks. It is not improved by giving salt, unless the patient has cramps.

Heat exhaustion is a somewhat less critical emergency, best treated by lying quietly in a cool place. Cool drinks are given as desired by the patient.

Heat cramps are incapacitating and painful but not dangerous to life for many hours, if at all. The only effective treatment is replacement of sodium chloride and water which have been lost by the body. Glucose, either alone or in addition to saline solutions, is of no therapeutic or prophylactic value.

NUTRITION as a factor in the prevention of reactions to toxic substances — FOULGER (FOULGER, J. H., *Medical Clinics of North America*, 26: 1145, 1942) has studied the effects of the administration of 100 mg. daily of vitamin C to individuals working in the presence of trinitrotoluol and has found indications of a beneficial effect. He has also found an increase in the proportion of conjugated to free beta-naphthylamine excreted in the urine following the administration of vitamin C and vitamin B_1 to human subjects. Confirmatory studies are at present not available. It is recommended that the plant physician consider the administration of vitamins, to prevent toxic reactions in the chemical industries, to be in the experimental stage. Many plant physicians are in a position to conduct well-controlled studies and add materially to the scanty fund of knowledge on this subject.

The mass of evidence indicates that vitamin C is not an effective prophylactic agent for lead poisoning and has little merit as a therapeutic agent in this condition. (EVANS, NORWOOD, KEHOE, and MACHLE: *J.A.M.A.*, February 13, 1943).

The value of milk in the prophylaxis of lead poisoning is generally accepted but there is no justification for its reputation as an effective prophylactic for toxic reactions in the manufacture and handling of trinitrotoluol, dinitrotoluol, nitroglycerine, etc.

PREVENTION of the common cold — Neither vitamin A nor any other single vitamin has been proven to materially decrease the incidence of the common cold among significantly large groups of the American population.

POLYVITAMIN preparations in industry — Good nutrition must be based upon a good diet of natural foodstuffs. It is not possible to assure industrial workers, indiscriminately, that they can obtain optimum nutritional health through the ingestion of a certain number of vitamin capsules regularly. Under certain conditions it may not be advisable to depend upon the available supply of "natural foodstuffs" for all of the essential food factors.

Where there exists an excessive loss of salts or vitamins from the body, where energy output and therefore metabolic requirements for these substances are extraordinarily high or where therapeutic amounts are indicated, the need for the administration of particular vitamins or salts in quantities greater than can be obtained in available foods may be present. Such needs should be defined by the plant physician.

Again, where the available supply of foodstuffs cannot be depended upon to satisfy even the average requirements for certain essential food factors, either because of deficiencies in supply or due to irremediable losses in the storage, transportation, or preparation of foodstuffs, indications for the use of food concentrates or synthetic vitamins may be present. Such conditions should be defined by a qualified dietitian or by the plant physician.

In the prophylaxis of vitamin deficiency diseases, foods naturally rich in vitamins such as yeast, liver, certain fish liver oils, and wheat germ, are to be considered preferable to the synthetic vitamins. Wherever possible such foods should also be incorporated in the therapy of nutritional diseases along with sufficient amounts of the indicated synthetic vitamins.

Venereal Diseases

ALTHOUGH the British have been even more loath than Americans to use the words syphilis and gonorrhea in print a 75% wartime rise in syphilis cases alone forced the Ministry of Health last winter to forget its tabus and start a national newspaper advertising campaign to combat venereal diseases.

In virtually all the London dailies except Lord Beaverbrook's *Daily Express* and *Evening Standard*, which wouldn't take the copy, appeared two-column, unemotional ads headed, "Ten facts about venereal diseases." They advised persons suffering to write their local health departments. Later ads developed more punch, in one instance featured an anonymous letter from an infected father with the jitters about his family.

In its all-out drive, backed by a new regulation requiring compulsory examination and treatment for infected persons, the Ministry of Health also is using colorful, skillful posters, a homemade film called "Subject Under Discussion" and a U. S. importation titled "Social Enemy No. 1," which it currently is showing in cinemas throughout the country.

Interesting are the approaches suggested by the Ministry to its copywriters. In a special memorandum, writers were warned not to "popularize" the subject. The ads, said the Ministry, must tell the public that it is possible to cure venereal diseases in the early stages but they must not make the cure seem so easy as to encourage carelessness.

Although the advertisements should alleviate fear and remove the stigma attached to syphilis, they must not make it so normal as to encourage promiscuity. Too, the ads should urge people to have continual treatments and break down their reluctance to do so for fear of detection. Prophylactic education was turned down because of religious opposition.

—*Tide*, May 15, 1943.

That they, too, may serve . . .

RECOGNITION of the importance of X-Rays as a weapon of war and safeguard of health has impelled many of our young men and women to direct their time and talents toward intensive study of this valuable contribution to medicine.

To these wartime medical students we owe especial gratitude for the battle they've accepted . . . not the battle of bullets and bombs...but the battle to complete their training faster and speed their entry into our army of Men *and Women* in White.

Because of their valuable understanding of X-Ray diagnosis, America shall know better health and more comfort as well as peace in a world which has brought the triumph of victory to its common people.

To these future doctors and technicians, whether in military service or civilian practice, we renew our pledge that Patterson research and manufacturing facilities are keyed to the demands of the war emergency . . . that we are doing our part towards an adequate supply of Intensifying and Fluoroscopic Screens and that we can assure them of maximum standards of quality in Patterson Screens.

THE PATTERSON SCREEN COMPANY
TOWANDA, PA., U. S. A.

Patterson Screens *Light the paths of X-Ray*

PATTERSON'S FACILITIES ARE DEVOTED 100% TO PUBLIC HEALTH AND THE FIGHTING FORCES OF THE UNITED NATIONS

Nothing comparable is coming out of U. S. government health offices, nor is anything likely to in the near future. For one thing, the syphilis rate in the U. S. is not yet as alarming as it is overseas. Although the April-June issue of *Federal Probation* indicated that some 3,200,000 persons in the country now have syphilis, and three times as many have gonorrhea, the over-all venereal disease rate among military personnel now is less than half the rate prevailing during any year of the last war.

Nor has the rate of infection among civilians risen much since the war. How long this will last, however, physicians consider problematical. For one thing, they expect it to zoom in areas of shifting population and overcrowded war centers, where the control and treatment of it is difficult and getting more so.

Some venereal disease advertising has run in the U. S. Recently the Atlanta *Constitution* ran a full-page, multi-sponsored ad on the topic. And for the past 15 years, with some lapses, the Metropolitan Life Insurance Co. has turned over the February advertisement of its welfare series to the subject. A few other insurance firms have distributed some booklets on venereal diseases.

Under the energetic direction of Surgeon General Thomas Parran of the U. S. Public Health Service, that organization has got out posters for display in public places, industrial plants, etc. This activity has stepped up since the war started and in a few cities local health authorities have even got transit companies to contribute car-card space. In Philadelphia last July the cards whipped up a teapot tempest when liquor groups spotted an inference that heavy drinking increased the incidence of infection. Nevertheless the ads stayed in.

One of the most active private organ-

MEDICATED DRESSING

As a medicated dressing ANTIPHLOGISTINE is applied at room temperature (not heated).

It acts as a protective, soothing covering—helps prevent secondary infection. ANTIPHLOGISTINE absorbs products of inflammation, stops itching and removes crusts and scales. And in minor burns, relieves pain and helps prevent blisters.

Formula: Chemically pure Glycerine 45.000%, Iodine 0.01%, Boric Acid 0.1%, Salicylic Acid 0.02%, Oil of Wintergreen 0.002%, Oil of Peppermint 0.002%, Oil of Eucalyptus 0.002%, Kaolin Dehydrated 54.864%.

The Denver Chemical Mfg. Co., New York, N. Y.

Antiphlogistine

izations has been the American Social Hygiene Assn. which has prepared great numbers of pamphlets, books and posters and has aided in the distribution of films. And after a year of spade-work, the North Carolina State Health Department will soon study techniques to combat venereal diseases, in which it may experiment with paid advertising. It is getting the funds ($250,000) from a foundation set up by R. J. Reynolds.

Amendments in Michigan

THE major revisions in the Workmen's Compensation Act as amended by the 1943 Michigan Legislature, are enumerated, with a brief description of each. More detailed information relative to this law (Act 245, P. A. 1943) may be obtained by writing to the Director, Bureau of Industrial Hygiene, Michigan Department of Health, Lansing, Michigan.

1. The Act applies to all employers regularly employing eight or more workers. It does not apply to employers subject to the provisions of any Federal employers' liability law, nor does it apply to farm laborers or domestics.

2. The Act provides compensation for all occupational diseases or injuries (blanket coverage) in contrast to the scheduled 31 diseases appearing in the old law.

3. The Act provides double compensation for injuries to minors illegally employed.

4. The Act provides for increased liability on the part of the employer for medical care. The period for this responsibility has been increased from 90 days to six months with an additional six months possible at the discretion of the Commission, upon written request of the employee and after the employer or his insurer has been given an opportunity to file objections.

5. The Act provides for increased benefits up to $21.00 per week for injury or illness and a graduated scale of death benefits up to $27.00 per week based upon the number of dependents. In no case shall the period covered by such compensation be greater than 500 weeks from the date of the injury, nor shall the total amount of all compensation exceed $10,500.00 except for permanent and total disability, when compensation shall be paid for 750 weeks from the date of injury.

6. The Act provides for waivers for silicosis and other dust diseases of the lungs under special circumstances. This clause practically makes it mandatory for industry to adopt a medical program for self-protection. It not only compels management to examine all new employees, but also those currently employed, since industry becomes liable for all dust diseases of the lungs not formerly covered by the old law. Prior to this amendment, silicosis was compensable only in the mining industry. Similar cases existing in other industries now are compensable and if not discovered by medical examination and a waiver obtained, the Company is held liable. Written request for such waiver must be filed with the Michigan Department of Labor and Industry on or before 120 days from July 30, 1943, the effective date of the new law.

If an employee is not examined, the Company employs him "as is" and becomes liable for compensation. Therefore, it behooves management to establish an adequate medical program and develop a complete filing system of medical records for each individual employee.

Disaster Operations Plan

EVERY plant medical department should prepare a "disaster operations plan" to provide adequate medical service in case of a plant catastrophe involving large numbers of casualties. This is the advice presented in a new bulletin, "Emergency Medical Service for Industrial Plants," issued by the Medical Division of the Office of Civilian Defense.

The War and Navy Departments have urged that plants for which they are responsible plan to use the facilities and services of the Emergency Medical Service organized by Civilian Defense authorities. The Medical Division has in turn urged that local Chiefs of Emergency Medical Service assist plant medical departments by placing the community medical facilities at their disposal in the event of a major emergency, regardless of its cause.

Pointing out that plant medical departments are not ordinarily staffed or equipped to provide medical service for the large number of casualties which may occur in a major disaster, the bulletin outlines arrangements which should be made to assure adequate medical care at such times.

The disaster operations plan should provide for necessary first aid care at the site of the incident, for adequate ambulance service, and for hospitalization of the seriously injured, the bulletin advises.

Provision must first be made for casualty stations. Several sites should be selected, in order that alternative locations may be used in case those of first choice are destroyed or rendered unserviceable. An additional site outside the plant should be selected for use in the event of extensive damage to the plant, such as might occur in a bombing or explosion.

The importance of identification and records is especially emphasized in the bulletin. "In any disaster confusion will be inevitable," it is pointed out. "It will be difficult, without adequate records, to identify the seriously injured and the dead and to determine the number and names of the missing. The uninjured as well as the injured should be accounted for. A record should be made of every person who leaves the plant. The record should indicate the places to which the injured have been taken."

In a consideration of transportation, the bulletin recomends that arrangements be made with the local Chief of Emergency Medical Service to insure that ambulances under his direction will be made available to the plant should a disaster involve the entire community. Similarly, any ambulance facilities owned by the plant should be made available to the local Chief if they are not required at the plant.

Present plans for the hospitalization of industrial accident victims are likely to be grossly inadequate in the event of a major plant catastrophe, the bulletin declares. Large numbers of patients should not be sent to one hospital, if other hospitals are available. To provide quick and efficient service to injured persons, casualties should be distributed among various hospitals. Arrangements must be made with the local Chief of Emergency Medical Service for the admission of casualties to community hospitals, all of which will be under his supervision during a major emergency.

A prerequiiste to the entire plan of mutual aid between a plant and a community is a definite understanding that members of the Emergency Medical Service will be admitted promptly to a plant in an emergency. To assist plant managers to carry out their duty in keeping unauthorized persons out of war production plants and to facilitate the admission of physicians when they are needed, the Service Commands of the Army are conducting investigations of the key personnel of the Emergency Medical Service. Personnel investigated and approved by the Service Command, will receive identification cards from the Office of Civilian Defense.

The bulletin sketches the organization and operation of protective services in a community, and the over-all protective services recommended for industrial plants. It also outlines the program of federal compensation for injuries to Civilian Defense workers and explains how this plan applies to industrial workers. A bibliography of pertinent material is included.

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Absenteeism

WAR PLANTS without systematic plans for reducing the causes of absenteeism have nearly twice as high a rate of job absences as those which do have such programs, according to the Office of War Information. The report was based on interviews with workers in each of 18 war plants in various industries and various sections of the country, talks with a number of the absentees themselves, and information from the plants, representatives of labor and management, and community leaders.

Seven plants with systematic programs were found to have a job absence rate averaging 4.4% a month. Nine other war plants, with hit-or-miss methods, had an absence rate of 8.1%.

Analysis of absence records of 1,800 workers—100 in each of the 18 plants—showed:

1. Married women are absent most. Next come single men, then single

women. Married men are absent least.

2. Those who had been on the job between three months and two years were most frequently absent. Next came those with less than three months. Least absent were the old hands with more than two years experience.

3. New residents of a community are more often absent from the job than regular residents.

4. Workers who object to plant health or safety conditions, or lunch arrangements, or promotional policy, are more frequently absent than satisfied workers.

More than half of the workers had specific suggestions in answer to the question what can be done to cut down absenteeism. The most frequent were for re-arrangement of hours of work and not granting overtime pay for the week in which the worker is absent. Other suggestions: improve plant conditions, community conditions, wages, and productive efficiency, educate employees, reward regular attendance, discharge the absentees and put them in the Army.

Typical proposals for rearrangement of hours of work showed the workers were concerned with reducing long hours, or concentrating work so they will have afternoons or days to themselves. Some were: "Give Saturday afternoon off." "Let everyone take a day off a month to take care of personal work." "Permit one shopping day a month." "Give workers vacations." "Give five and a half days a week and work longer each day."

Plant complaints often emphasize the difficulty of getting decent food in or near the plant. One worker, in a shipyard's plant paper, writes colorfully:

"Over at Yard 3 last Monday the old yard bird bumped into two girl burners eating their lunch by the check-out gates in the rain. The girls looked like two dead kittens floating in a rain-barrel. Seems somebody swiped their lunch-pails on the ferry so they were eating the only kind of lunch they could buy—a jigger-sized box of cottage cheese . . . that's the way it is at Yard 3. If you forget your lunch or lose it, you can't get a check-out pass to go and buy some more. At Yard 2 you're lucky. If you don't have a pail at lunch whistle time, you can sneak up against the fence and sniff the delicious, tantalizing smells floating out the window of the office workers' cafeteria. And at Yard 1 you're really in gravy—slightly chilled. For any small sum up to a buck you can buy one of those extra special box lunches from food wagons inside the gate. Of course, one craneman got sick last week just after he finished his fancy sandwiches and potato salad, and yesterday another craneman had cramps so they had to carry him down from his whirley to the first-aid station. But maybe cranemen have delicate stomachs. When is somebody going to get wise to the cold fact that much of the unofficial absenteeism and official sickness is caused purely and simply by cold, lousy, and otherwise inadequate food?"

The difference in absences between plants with programs and those without was shown in two aircraft companies in the same community, where housing, working and living conditions were substantially the same for both groups of workers. The absence rate in the yard with a systematic program, one of the most thorough of all the plants surveyed, was half that of the other.

A plant has taken a long step in dealing with the problem of absenteeism if it institutes a systematic investigatory procedure for absences, the survey disclosed. It also was found that when a plant provides facilities for the worker's convenience, his reasons for absence are automatically reduced.

Punitive methods were used in some of the plants, including dismissals and layoffs, but these seem to be used mostly as threats except in a few flagrant examples. One shipyard tried to shame absentees by issuing "Hitler check" for time lost, but the resentment was so strong that the company quickly dropped the plan. Some workers quit, and many brought in evidence they were ill or had other justifiable reasons for absence.

Medical and accident prevention programs were major factors in systematic anti-absenteeism efforts. Some plants have medical staffs or clinics, and visiting nurses. A staff or safety men, insistence upon safety shoes and other devices, and requirement that simple safety rules be universally observed have also been used effectively.

In the plants visited, however, few personnel departments were making broad, positive efforts to change working conditions to keep the employees satisfied. The one aircraft plant with an outstanding program against absenteeism was exceptional in this respect.

Criticism by many women workers and by some men centered around inadequate and insanitary washroom facilities, which are directly related to health. One machinery plant was found to have remodeled its washrooms and provided lounges for women. In an aircraft company with no lockers and inadequate washroom facilities, it was found that uniforms which quickly become oil-soaked are changed only once a week, and produce skin-rashes and contribute to colds. Another company allows men a half-hour on company time to shower and change, and is installing a laundry to supply fresh underwear, overalls, and socks each day.

Communities in some instances cooperated to ease war workers' burdens, encouraging stores to keep open in the evenings and recreational facilities to accommodate their hours to workers on various shifts. In Los Angeles, for example, the city council suspended an ordinance closing bowling alleys at 2 A.M., and the movies went on a 24-hour basis. Some schools have allowed gymnasiums to be used by war workers.

Here are Office of War Information recommendations for reducing absenteeism by attacking its causes, based on a survey of 18 war plants and 100 workers in each plant:

1. Fact-finding machinery should be established in each plant to discover causes of absenteeism.

2. Support and confidence of workers should be sought through unions and labor-management committees, which will carry out phases of the programs.

3. Ease the burdens on working wives and mothers by extending shopping and other hours and providing child-care facilities.

4. Improve bad plant conditions, such as poor heating, inadequate

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locker and wash-room facilities, slow and insufficient medical attention for accidents.

5. Safety rules and full-time use of safety devices are important.

6. Provide hot, nourishing meals at reasonable prices.

7. Help workers to adjust themselves to new jobs and communities by bettering in-plant training, and providing adequate housing, transportation and recreation. Management needs to convince employees that it is all-out for production and does not discriminate in promotion and upgrading.

8. Prevention and remedy are better than punishment.

Syphilis

—An Approach, in Industry—

EARLE GEORGE BAXTER, M.D.,
Cincinnati Milling Machine Company

MASS serologic tests for syphilis were done on 5,585 employees in an attempt to ready the industry for continuous syphilis investigation in the following manner: After the various departmental heads were duly notified, and full cooperation was offered, an hour and a half a day was alloted to the taking of specimens. The particular department or departments were asked to send 100 to 150 employees to the medical department at a specified time. In accordance with the plant routine, these were asked to bring a card indicating their name, clock number, age and color. Approximately six dozen sterile syringes and a hundred 20-gauge needles were in readiness as well as an abundance of specimen tubes. The patient was asked to sit down opposite the doctor at an examination table, bare the antecubital fossa of his choice, squeeze the upper arm and close his fist tightly. The manual tourniquet was found greatly to increase the speed of testing and also divert the patient's attention. The specimen tubes and cards were handled by a nurse obtained through the cooperation of the City Public Health Department. As a result there were remarkably few cases of syncope and the rate of testing was 30 seconds per man.

All specimens were sent to private laboratories in the city and paid for by funds from the employees Health and Benefit Association. All serological results were returned on 3 x 5 typewritten cards which were found easiest to file for future reference. The negative results were stamped as such in the permanent individual records in the medical department. Those with positive tests were marked with a red star and filed in the same records. City or state laboratories might have been used for testing, and this privilege is now being utilized for new employees' serologies.

The positive serology of the employee is kept in the strictest confidence of the employee, the company physician, and the employee's family physician. The employee with a positive serology was called to the medical department and told:

1. That his blood test showed a positive reaction indicating that he may have syphilis.

2. That there is always a possibility of error and so a second test will be made immediately (by the plant physician).

3. That he must return to the medical department in three days to learn the results of the second test (this excludes those cases who have a history of previous treatment and such cases were asked to see their own physician immediately to complete diagnosis).

4. That if the second test should differ from the first, then a third test would be made for further checking.

5. That if two positive serologies are found in this series, then an additional special physical examination should be made by the family physician.

6. That if he is not in the primary or secondary stage this disease will not interfere with his employment provided he takes satisfactory treatment when indicated.

Other than the actual blood testing, the "follow-up" is felt to be of greatest importance. Everything is for naught if the patient does not receive the proper therapy over a sufficient period of time, and this responsibility is

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rightly placed in the hands of the plant physician. He can manage the "follow-up"

1. By advising the syphilitic employee, diagnosed as such by his family physician, that he must continue treatment under his own physician's instructions in order to retain his job, and

2. By insisting upon a statement from the outside doctor showing treatment, progress, and dismissal of patient.

The task of dealing with those positive serologic cases is no small job, and takes a great deal of firmness and patience. It must be done with a minimum of help due to the confidence involved between physician and employee. As the volume of positive and negative cards increase in number they are handled in the usual routine office method, but nevertheless require a great deal of time.

The attitude of the employees as a whole toward this type of campaign is of the best. Ninety-eight per cent submitted to the test, and remarkably few asked questions pertaining to the technique and possibilities of error. The word syphilis, apparently so distasteful to the average laymen, was avoided if possible. It was strongly used, however, when necessary. No false ideas were allowed to enter the minds of the employees during any conversation.

The methods of investigation were changed in some instances as the various problems presented themselves. It was at first thought practical to have the second, possibly third serologic test done by the family physician. When several cases returned after having negative findings by their family physician and wished remuneration for their time and trouble, it was thought advisable to do all rechecks in the industry.

The attitude among the women found to have a positive test for syphilis gives added emphasis to the need of more education of the public concerning venereal diseases.

One of the most impressive findings was the apparent reluctance on the part of the family physicians to study thoroughly the cases referred to them. Only one private physician out of the large number involved submitted a detailed report of the physicial examination, blood and spinal fluid findings of the cases referred to him. It appeared that anti-syphilitic therapy was instituted in the majority of cases with nothing more than a brief history and two positive serologic tests, and in some instances, early in the campaign, a recheck serologic test was not done.

In keeping with the nation-wide ratio, the largest percentage of cases with positive serologic tests, according to the industrial physician's impression, were of the late latent type. Approximately 5% of these had spinal

References on Industrial Hygiene

— In Relation to National Defense and War —

Compiled by National Health Library, 1790 Broadway, New York City

(Supplements the Lists in INDUSTRIAL MEDICINE, *April, 1942, May, 1942, September, 1942)*

ABSENTEEISM. I. Fortune's view. II. CIO's view. Personnel journal (New York City) 21: 368-70, April 1943.

ADEQUATE lunch service for workers helps maintain production. Victory bulletin, Office of war information (Washington, D. C.) 4: 452, April 28, 1943.
Recommendations for nutrition of workers by Nutrition in industry division, FDA.

ANDRIOLA, JOSEPH. Mental-health problems in a war-production area. Mental hygiene (New York City) 26: 560-67, October 1942.

BEST, DOYLE. Vocational rehabilitation and the war effort. National rehabilitation news (Roanoke, Va.) 9: 8-9, 16, January 1943.

BOUDREAU, F. G., M.D. and GOODHART, R. S., M.D. Food and nutrition of the industrial worker in wartime. American journal of public health (New York City) 32: 1335-40, December 1942.

BOUTON, M. A., M.D. The syphilis problem in a defense area. Venereal disease information, U. S. Public health service (Washington, D. C.) 24: 47-48, February 1943.

CARLISLE, J. M., M.D. Industrial medicine. Journal of the Medical society of New Jersey (Orange) 39: 552, October 1942.
Report of Committee on industrial health, Medical society of New Jersey.

CARLSON, A. J., M.D. The older worker. Hygeia (Chicago) 21: 338-39, 375-77, May 1943.

DRAPER, W. F., M.D. Government's obligation in industrial health. New England journal of medicine (Boston) 228: 177-79 February 11, 1943.

"EAT to beat the devil." Servel's industrial nutrition program. Industrial medicine (Chicago) 11: 524-25, November 1942.
Program of Servel, Inc., Evansville, Indiana.

ECHOLS, F. H. Finding war jobs for Alabama's 4-F men. National rehabilitation news (Roanoke, Va.) 9: 4-5, January 1943.

EVANS, DUANE. Problem of absenteeism in relation to war production. Monthly labor review (Washington, D. C.) 56: 1-9, January 1943.

THE evils of long working hours. British medical journal (London) p. 132-33, August 1, 1942.

FERRIS, CHARLOTTE. Nutrition education for industrial workers. Journal of home economics (Washington, D. C.) 34: 444-46, September 1942.

FISHBEIN, MORRIS, M.D. Health in industry. Journal of the Indiana state medical association (Indianapolis) 35: 401-2, August 1942.

FITZGIBBON, J. H., M.D. The Kaiser medical problem. Industrial medicine (Chicago) 12: 42-44, January 1943.
How the medical and hospital service emergency was handled in connection with the Kaiser yards.

FLINN, R. H., M.D. Recommended medical services for munition plants. Industrial medicine (Chicago) 11: 438-39, September 1942.

FLOORE, F. B. The dietitian and industrial feeding. Journal of the American dietetic association (Chicago) 18: 635-41, October 1942.

FORSTER, N. K., M.D. Problems in wartime industrial practice. Journal of the Indiana state medical association (Indianapolis) 35: 416-20, August 1942.

GILDEA, M. C.-L., M.D. Industrial psychiatry in wartime. American journal of orthopsychiatry (New York City) 13: 141-46, January 1943.

GOODHART, R. S., M.D. The nutrition of war workers. Journal of the American dietetic association (Chicago) 19: 95-97, February 1943.

GRADUATE course on industrial health and medicine in war time at Yale university. Science (Washington, D. C.) 96: 291, September 25, 1942.

GRAVES, L. B., R.N. Health program for defense workers. American journal of nursing (New York City) 42: 1401-2, December 1942.
Work in one area in Wisconsin.

IGNATIEFF, FLORENCE. Food for workers. Health, Health league of Canada (Toronto) 10: 6-7, 30, Winter 1942-43.

IGNATIEFF, FLORENCE. Nutrition in war industry. Canadian public health journal (Toronto) 33: 571-74, December 1942.

INDIANA state medical association. Committee on industrial health. Highlights of the meeting of the Committee on industrial health. Journal of the Indiana state medical association (Indianapolis) 35: 641-42, November 1942.

INDIANA'S industrial health conference, February 25 and 26, 1943. Journal of the Indiana state medical association (Indianapolis) 36: 90-94, February 1943.
Program of conference and educational program.

INDUSTRIAL feeding. Lunches for workers in defense industries. Journal of the American dietetic association (Chicago) 18: 682, 684, October 1942.

INDUSTRIAL health program making steady progress in Penna. Pennsylvania's health, State department of health (Harrisburg) 4: 3, March 1943.
Program to protect health of workers and prevent loss of man-hours vital to war production.

INDUSTRIAL hygiene foundation of America, inc. Keep war workers well: abstracts of proceedings of the seventh annual meeting, Pittsburgh, November 10-11, 1942. Industrial medicine (Chicago) 12: 14-31, January 1943.

JAMES, W. D. Health in industry. Wisconsin medical journal (Madison) 42: 318-21, March 1943.

JOHNSON, O. J., M.D. The medical profession's part in the war industrial effort. Pennsylvania medical journal (Harrisburg) 46: 191-93, December 1942.

JOHNSON, O. J., M.D. Public health and medical relationships in industrial health. American journal of public health (New York City) 32: 1157-63, October 1942.
Cooperation needed, emphasis on preventive work.

KIENE, JULIA. Promoting better nutrition for industrial workers. Journal of the American dietetic association (Chicago) 18: 728-30, November 1942.
Program of the Health for victory club, Westinghouse electric and manufacturing co., Mansfield, Ohio.

LANZA, A. J., M.D. The army's contribution to industrial hygiene. American journal of public health (New York City) 33: 317-18, April 1943.
Application of industrial hygiene to the armored forces.

LANZA, A. J., M.D. Industrial activities of the Surgeon general's office. Journal of the Indiana state medical association (Indianapolis) 35: 416, August 1942.
Work of the Division of occupational hygiene recently set up.

LOCAL defense and venereal disease control. Weekly bulletin, California state department of public health (Sacramento) 21: 205-6, January 16, 1943.
Control in the vicinity of military and industrial areas.

LONG, C.-F., M.D. WAACS in the industrial army; problems of female employment. Pennsylvania's health, State department of health (Harrisburg) 3: 6-7, 13, 16, December 1942.
Health and safety problems.

LYNCH, D. L., M.D. Industrial health and the war. New England journal of medicine (Boston) 227: 209-16, August 6, 1942.
Abstracted in Industrial medicine (Chicago) 11: 429, September 1942.

LYNCH, D. L., M.D. Industrial health and the war: statistical analysis of the medical causes of absenteeism. Industrial medicine (Chicago) 12: 236-46, April 1943.

MARKUSON, K. E., M.D. "Industrial hygiene" is "science of preservation of health of industrial worker." Michigan public health, State department of health (Lansing) 30: 185-86, 193, October 1942.

MASSEY, ARTHUR, M.D., D.P.H. and PEARSON, R. C. M., M.D., D.P.H. Sick absence among munition workers. British medical journal (London) p. 694-95, December 12, 1942.

MAYERS, M. R., M.D. Kinds of foods for proper nutrition of war workers prescribed. Industrial bulletin, New York state department of labor (Albany) 21: 300-2, September 1942.

MAYERS, M. R., M.D. Problem of adequate nutrition for war industrial workers. Industrial bulletin, New York state department of labor (Albany) 21: 232, June 1942.

MEREWETHER, E. R. A., M.D. Occupational medicine and hygiene; its role in Britain in wartime. American journal of public health (New York City) 33: 1-14, January 1943.

MINIMUM requirements for safety and industrial health in contract shipyards. Industrial medicine (Chicago) 12: 259-63, April 1943.

MOTHERS and woman power in relation to industry. Mother and child (London) 13: 85-91, August 1942.

MULFORD, MONTGOMERY. Girls in war plants. Personnel journal (New York City) 21: 356-58, April 1943.

Some of the social and moral problems observed in war plants, where women are employed.

NATIONAL health library. References on industrial hygiene in relation to national defense. Industrial medicine (Chicago) 11: 184, 234, 446, April, May, September 1942.

NEW YORK (state). Division of women in industry and minimum wage. Meal periods in industry. Industrial bulletin, New York state department of labor (Albany) 21: 305-7, September 1942.

Food and relaxation are essential for maximum war production.

PAULLIN, J. E., M.D. The physician in industry. Journal of the Indiana state medical association (Indianapolis) 35: 412, August 1942.

Procurement and assignment agency has duty of seeing that industry receives quota of physicians.

PENNSYLVANIA. Medical society. Commission on industrial health and hygiene. Advice to county committees on industrial health and hygiene. Pennsylvania medical journal (Harrisburg) 46: 414-25, February 1943.

PETERSON, C. M., M.D. Industrial health in wartime. Journal of the Indiana state medical association (Indianapolis) 35: 410-11, August 1942.

PETERSON, C. M., M.D. Industrial health and the war. Journal of the Indiana state medical association (Indianapolis) 36: 125-26, March 1943.

PREGNANCY and women's war work. Journal of the American medical association (Chicago) 120: 779, November 7, 1942.

PRENDERGAST, J. J., M.D. Unexpected occupational disease exposures during wartime. American journal of public health (New York City) 33: 330-35, April 1943.

Experience of Chrysler corporation, Detroit.

RE-EXAMINATION of absenteeism. Industrial medicine (Chicago) 11: 486-87, October 1942.

Need for re-examination of absenteeism in the light of the war effort and with fairness to doctor and worker.

SCHWARTZ, LOUIS, M.D. Industrial dermatitis in our war industries. Industrial medicine (Chicago) 11: 457-62, October 1942.

SEELEY, S. F., M.D. Procurement and assignment service quotes industrial needs. Journal of the Indiana state medical association (Indianapolis) 35: 421, August 1942.

SELBY, C. D., M.D. War time problems of industrial health. Kentucky medical journal (Bowling Green) 41: 53-56, February 1943.

SELLING, L. S., M.D., Dr. P.H. Industrial psychiatry in wartime; employability of certain mental cases. Industrial medicine (Chicago) 11: 407-11, September 1942.

SPOLYAR, L. W., M.D. and FERREE, J. W., M.D. Some occupational diseases associated with the war production program. Journal of the Indiana state medical association (Indianapolis) 35: 402-6, August 1942.

STAFFORD, F. S. A physically fit industrial America. Monthly bulletin, Indiana state board of health (Indianapolis) 46: 13, January 1943.

STEPHENSON, C. S., M.D. and BURTON, O. L. M.D. Industrial hygiene program of the U. S. navy. American journal of public health (New York City) 33: 319-23, April 1943.

Safety program for industrial employees of the U. S. navy.

THOMAS, R. E. The physically handicapped in war industries. Crippled child (Elyria, O.) 20: 61-62, 81-82, October 1942.

TOLMAN, C. P. Industrial eye efficiency in the war program. Sight-saving review (New York City) 12: 244-51, December 1942.

TOWNSEND, J. G., M.D. Industrial hygiene activities in the Public health service. American journal of public health (New York City) 33: 324-29, April 1943.

Current program expanded for wartime needs.

U. S. NATIONAL institute of health. Division of industrial hygiene. Progress report on industrial hygiene in the national defense program. War medicine (Chicago) 2: 497-503, May 1942.

VITAMINS and industrial workers. New Hampshire health news, State board of health (Concord) 20: 2-4, October 1942.

VITAMINS for the industrial war worker. Health news, State board of health (Concord) 20: 2-4, October 1942.

VITAMINS for the industrial war worker. Health news, New York state department of health (Albany) 19: 150, September 7, 1942.

Plan of New York state Office of war nutrition service.

WAR conference, Rochester, New York, May 24-27, 1943. Industrial medicine (Chicago) 12: 155, March 1943.

Announcement of conference on industrial health.

WARTIME industrial health: symposium. California and western medicine (San Francisco) 57: 233-44, October 1942.

Objectives of the institutes on wartime industrial health, by R. T. Legge, M.D.—Industrial hygiene in war production, by J. J. Bloomfield.—Industry's manpower: its conservation, by C. P. McCord, M.D.—San Francisco management looks at industrial health, by F. P. Foisie.—Los Angeles management looks at industrial health, by V. R. Nabors.—San Diego management looks at industrial health, by W. F. Persons.—Physicians' legal responsibilities in industrial medicine, by C. H. Fry.—Problems in industrial surgery, by N. J. Howard, M.D.—Industrial injuries: their surgical management, by B. M. Frees, M.D.

WIEHL, D. G. Diets of a group of aircraft workers in southern California. Milbank memorial fund quarterly (New York City) 20: 329-66, October 1942.

Investigation made jointly by several organizations at the Lockheed aircraft corporation, Burbank, California.

WITKOWSKI, L. J., M.D. and FISCHER, C. N., M.D. War industries bring problems. Bulletin, National tuberculosis association (New York City) 28: 135-36, September 1942.

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fluid tests. Under the circumstances, it is felt that the remainder of these cases are under treatment without being fully diagnosed, and irreparable damage is potential. All latent syphilis patients should have a spinal fluid Wassermann or gold-curve before arsenicals are used.

At the time of consultation of each case prior to his being referred to his family physician, the employee is told that he needs anti-syphilitic treatment for his own good. If this does not impress him he is told that he must consider the welfare of his family and, beyond this, the safety of the plant employees. Medical science, in this instance is considerably handicapped, because it cannot show these patients their fellow employees, one with a syphilitic aneurysm, another with paresis, etc.

Great variations in anti-syphilitic therapy were observed. One patient was treated with bismuth just long enough for a supposed penile chancre to disappear. Another was given a month's rest period after eight shots of bismuth, still another a two months' rest period after 12 hip shots of bismuth. A patient was dismissed when found to have a negative blood serology after six months therapy; his family physician disregarding all clinical evidence. The treatment of one syphilitic patient was discontinued because her doctor could not find any superficial veins. Some patients are being treated intensively and others conservatively for the same stages of the disease.

	Number Tested	Number Positive	Percentage
W. Male	4651.....	36	0.8%
W. Female	168.....	1	0.6%
C. Male	765.....	68	8.8%
Total	5585	105	1.8%

Conclusions and Results

THE job at hand is mass blood serological testing for syphilis. Beginning the task of testing only new employees is not enough, and permits evasion by many employees. Mass serology tests should be done at least annually.

2. Perhaps a more detailed clinical investigation could be done by the industrial physician before referral, thus reducing both time and expense for the patient and his physician.

3. The use of the manual tourniquet for the taking of blood samples was found to be definitely advantageous.

4. It is felt that more education concerning venereal diseases could be practiced in the industries. But it must be of a high type.

5. More emphasis should be placed on the fact that the various public health clinics are at the disposal of patients with low income.

6. Perhaps a more or less standard method of treatment can be instituted for the various stages of syphilis.

7. We must have patience with the various fallible methods of testing the blood serology, and treat rather than dismiss questionable cases.

8. We must endeavor to maintain a close relationship between industrial and non-industrial physicians.

Industrial Toxicology

THE incidence of industrial poisoning, unless controlled by alert medical supervision and wise management, tends to increase commensurately with the accelerated tempo of industry during war. Crisis does not permit the leisurely investigation by pharmacologists of every new material before its introduction into industry. Consequently the practicing physician is called on to assume another responsibility.

Since many chemicals, even the solids, evaporate freely, the pulmonary epithelium acts as efficiently as an avenue of entry as do the skin and mouth.

Although the military utilizes a multiplicity of explosives, all can be typified by nitroglycerin (actually glyceryl trinitrate and *not* nitroglycerin), T.N.T., and picric acid. At some stage in their fabrication nitric acid is used.

Nitroglycerin produces a characteristic vasodilatation which evokes the prominent signs and symptoms and methemoglobinemia. T.N.T. and picric acid however, produce more serious damage to the blood, including occasional severe anemias.

"'Current Medical Review," of "Industrial Toxicology as Related to the War Effort," by JAMES C. RICE, PH.D., in *Tri-State M. J.*; abstracted in *Medical World*, May, 1943.

The raw materials of the explosive industry can be arranged in order of their decreasing noxious potentialities as follows: Phenol, benzene, toluene, xylene, glycerol. Treatment of poisoning by these materials and the finished explosives, already described by type, is largely symptomatic.

The machine-tool industry introduces the hazard of intoxication by cutting oils required for high-speed operation. Protection from these agents rests mainly on insuring the cleanliness of the worker rather than ferreting out and eliminating the offending chemical from the cutting fluid.

The classical intoxication by the fumes of zinc and cadmium (a metal similar to zinc), together with the well-known poisoning by lead, constitute a large area of the toxicology of the non-ferrous metals.

Industrial solvents capable of producing serious intoxication may be roughly classified in three groups. One group contains the volatile narcotizing solvents such as gasoline, alcohol, acetone, ethyl acetate, etc. These are fairly inactive chemically, a fact which limits their chronic toxicity. In the *acute* sense these solvents may lead to death by respiratory paralysis if workers are exposed to high concentrations as in painting the interior of tanks. The second group is hepatotoxic. Exposure to high concentration of its representative members such as chloroform, carbon tetrachloride, the chlorinated naphthalenes (insulators for wire) and trichlorethylene (a degreasing agent) or chronic exposure to lesser concentrations may lead to toxic cirrhosis or acute yellow atrophy. The last group is narcotizing like the first group and carries the additional threat of severe residual changes in the blood and nervous tissue. In this group are: benzene, toluene, and xylene, and carbon disulfide.

Since prevention is better than the none too successful treatment of industrial poisoning the writer lists the following steps which wise management would invoke as prophylaxis:

1. Adequate control of ventilation, temperature, and humidity.
2. Education of the worker in cleanliness.
3. Mandatory frequent periodic washing of clothing.
4. Mandatory periodic physical examination of workers.
5. Transfer of susceptible workers to more optimal industrial environment.

Spray Painting

THE unions had two legitimate purposes in demanding the restriction of the use of paint spray equipment: the use of the spray equipment constitutes a health hazard; and such equipment saves time and thereby cuts down the amount of employment. In United States v. American Federation of Musicians (Ill. N. D. E. D., decided October 14, 1942, affirmed by the Supreme Court without opinion February 15, 1943), it was held that labor might combine to seek and obtain more employment through the elimination of the competition of mechanical devices; that such was a "condition of employment" and that their activities were within the exemptions of the Norris-LaGuardia Act.

The court will take judicial notice of the fact that the use of spray painting equipment constitutes a health hazard. It would appear that this would afford a good and sufficient reason for the unions to demand restriction or even prevention of the use of such equipment, and that the restraint would be immunized by §20 of the Clayton Act and by the Norris-LaGuardia Act.

From the opinion of District Judge ST. SURE, sustaining demurrer and dismissing indictment in *U. S. vs. Bay Area Painters and Decorators Joint Committee, Inc., et al.*, April 19, 1943.

THIS MONTH

—*Continued from page 4.*

health of workers and executives in industry should have the services of the best medical talent to be obtained anywhere." As to the 35% now working where medical services have been established, the record shows that the "should have" has become "does have." . . . REGARDING the editorial "Financial Absenteeism" (page 398) we have often wondered why the efforts to sell war bonds could not be stepped-up by combining with the appeal to patriotism an equally urgent appeal to realism. The money that isn't raised by bonds now will have to be raised by taxes later. Hence the more bonds sold per year the less the tax rate. . . . THE relation of the physician and surgeon to the compensation carrier (JOHN W. VACCARO, page 402) is no less important in war than in peace, but it is considerably less obvious under the pressure of getting things done to meet wartime schedules. Lest the obviousness accumulate against the time when the matters of such relationship will descend in battalions, it is well to be reminded that it exists, and probably to take time enough to study the elements and factors of which it is comprised. . . . IT IS probably fitting that space limitations require this column to end here, as otherwise a reader or two might infer that we think this issue of INDUSTRIAL MEDICINE is pretty good. . . .

MANUFACTURERS

E. R. SQUIBB & Sons add a new analgesic and antiseptic for use in genito-urinary conditions, under the name "Cajandol." A preparation of 5% oil of cajeput dissolved in peanut oil, with 0.1% propylparahydroxybenzoate as preservative, Cajandol was developed at the Brady Urological Institute, Johns Hopkins Hospital, and has been in use there during the past several years. Clinical experience has shown that Cajandol alleviates pain and distress due to instrumentation and fulguration. It is also beneficial in many types of acute and chronic cystitis and other pathologic conditions of the bladder. In treating these conditions, 10 cc. to 15 cc. of Cajandol are instilled into the bladder through a catheter at daily or biweekly intervals. In a few cases, Cajandol has been injected up the ureter during the use of the Councill stone extractor and has facilitated withdrawal of this instrument when there has been difficulty due to spasm of the ureter.

WINTHROP Chemical Company's Research Laboratories report an improved method for preparing the new sulfa compounds known as sulfanilymidines, which avoids use of expensive chemicals, facilitates manufacture, and makes these drugs more readily available than ever before. The new synthesis avoids use of the comparatively expensive paranitrobenzenesulfonyl chlorite, according to the authors. Because the drugs become, in consequence, easier to prepare, supplies will be more readily available to research workers to study their efficacy in infectious diseases.

PRODUCTION Safeguards Against Dermatitis," West Disinfecting Company's new brochure, treats the subject of industrial dermatosis in non-technical terms so that not only the physician, but anyone responsible for safeguarding the health and welfare of employees and preventing needless lost-time accidents in industry, may find it helpful. The more common causes of skin infections are briefly outlined and the products of the West Laboratories designed to help protect workers against dermatitis are classified in such a manner as to make a selection easy. Mailed on request.

WILLSON PRODUCTS, Inc., Reading, Pennsylvania, announce an improved welding glass, BLUE in color, that allows better vision than the usual green glass for aluminum and bronze welding, glass working, etc., where sodium yellow glare is present. This glass was developed for reducing sodium yellow glare only. Standard green Willson-Weld glass is still recommended for acetylene and electric arc welding.

PAVATRINE—a safe, potent, non-narcotic antispasmodic for use in dysmenorrhea and gastro-intestinal spasticities—is being introduced to the medical profession by G. D. SEARLE & CO. Pavatrine has a dual antispasmodic action—both neurotropic and musculotropic. It has the ability to abolish uterine contractions and relax spasm of the stomach, small intestine, colon and urinary bladder. To determine the human tolerance for Pavatrine, it was administered in amounts up to 23 grs. daily with complete freedom from untoward reactions. Usual adult dose, from 3 to 6 tablets a day.

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"A tooth in a silver leaf"...

In ancient Islam, it was believed that if a woman carried a tooth in a silver leaf, she would not conceive.*

● Superstition has been displaced in our enlightened world. Medical contraceptive practice today requires the selection of methods and materials that have been established on a scientific basis through technical and clinical research. The effectiveness of Ortho-Gynol can be attributed to the high degree of uniformity in the desirable physical and chemical properties. This is supported by satisfactory results obtained in extensive clinical studies.

*Himes—Medical History of Contraception

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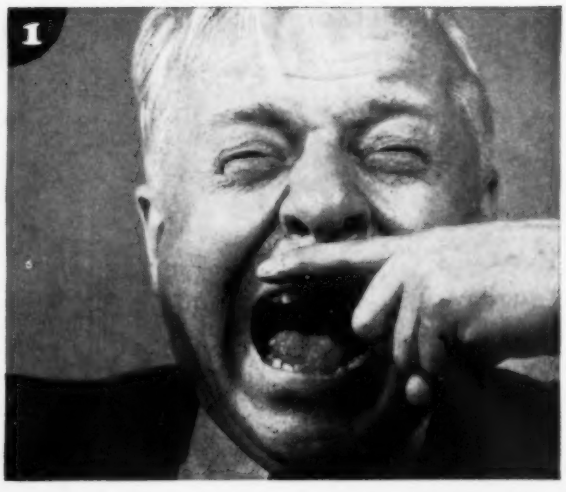

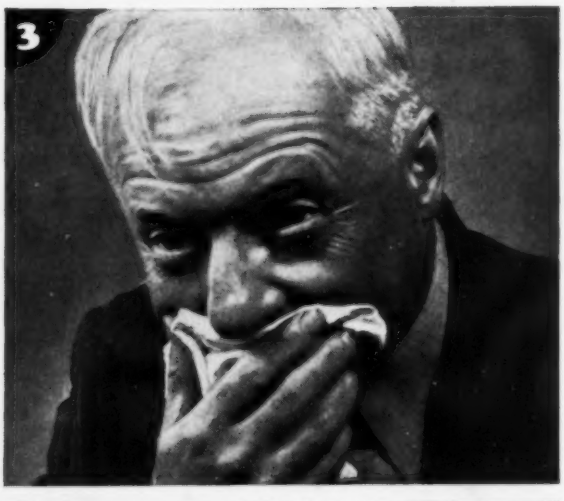

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